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TRINITY RIVER

Recreation Area Management Plan

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TRINITY RIVER RECREATION AREA MANAGEMENT PLAN

BUREAU OF LAND MANAGEMENT - CALIFORNIA

UKIAH DISTRICT

REDDING RESOURCE AREA

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TRINITY RIVER RECREATION AREA

Recreation Management Plan

U.S.D.I. - Bureau of Land Management

Redding Area Office

Ukiah District

August 1983

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Part I. Introduction

A. Location and Setting

The Trinity River system is located in the northwestern portion of California within the counties of Trinity and Humboldt. The main stem of Trinity River originates in eastern Trinity County and flows westward 170 miles to its confluence with the Klamath River and on to the Pacific Ocean. The main stem, combined with north and south forks, makes up the largest tributary of the Klamath River system.

Historically, the Trinity River and the lands within its valley provided aboriginal populations with essential resources and a pristine habitat for abundant wildlife and fish species. After the discovery of California's gold fields, the Trinity River area yielded millions of dollars in mineral wealth after being subject to tremendous resource alteration. The present day Trinity River still provides a habitat for wildlife, and contains some minerals; however, one of its primary values lies with the great opportunities it provides for a broad range of outdoor recreational activities.

The flows on the Trinity River are interrupted on its upper reaches by Trinity Dam and its afterbay, Lewiston Reservoir. These are both components of the Trinity River Division of the Central Valley Project completed in 1962, which serves to divert Trinity River water to the Sacramento River and the Great Valley.

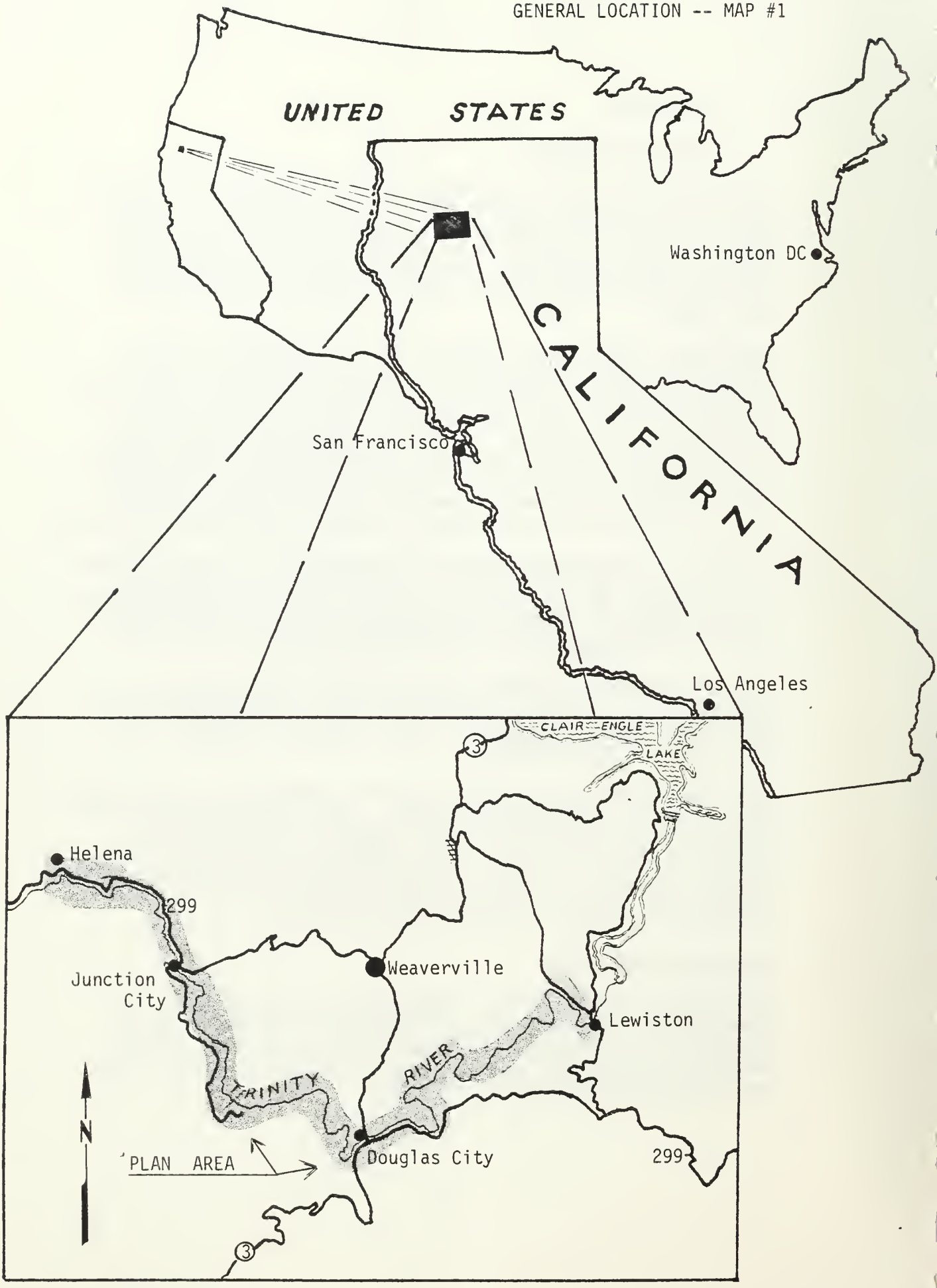
The Trinity River has considerably more even flows seasonally compared to its historic, free-flowing state. It has been changed from a wide, swift flowing river that frequently flooded, into a low volume, controlled stream.

Much concern has been generated since the construction of the dams about the future of the Trinity River. The cutback in annual flows has resulted in drastically reduced anadromous fish populations. Increasing sediment buildup in the streambed, continuing mining activity, and water quality degradation threaten the integrity of the river resources. Increasing development along the river is impinging on all facets of the river environment.

B. Background Information

The Trinity River Recreation Area Management Plan addresses the management of recreation use and resources on the Public Lands (Bureau of Land Management (BLM) administered lands) within approximately 1/4 mile of the main stem of the Trinity River between Lewiston and the North Fork confluence.

GENERAL LOCATION -- MAP #1



Not to scale

This plan is required as part of the management prescription for the Trinity River Management Prescription Area, a part of the 1982 Redding Land Use Plan. This plan defines the manner in which the BLM will carry out its outdoor recreation management responsibilities on the BLM administered public lands along the Trinity River. While this plan is not intended to address other BLM land and resource management programs (wildlife habitat, forestry, etc.), it will be consistent with the Redding Land Use Plan decisions concerning those other programs. The plan will also be consistent with the management program developed by the Trinity River Task Force (March 1982) which deals with fish and wildlife resource restoration for the Trinity River. All projects identified in this recreation management plan will be coordinated with the Trinity River Task Force.

The stated objective of the Redding Land Use Plan of 1982 is "to manage the public lands within the parameters of the Wild and Scenic River Act (WSRA) (P.L. 95-625)." There has been considerable controversy surrounding the inclusion of the Trinity, along with several other California rivers, in the National Wild and Scenic Rivers System. Appendix G outlines the legislative chronology with regard to the status of the Trinity River in the State and National Wild and Scenic Rivers System.

The Trinity River Recreation Area is located entirely in Trinity County in northwestern California. Portions of the river and its adjacent land are privately owned or administered by the U.S. Bureau of Land Management, Forest Service, Bureau of Reclamation, Trinity County, and State of California.

The primary zone of influence is the Trinity River Basin within Trinity County. However, the Trinity River exerts an influence on many widespread facets of life in northern California. Its presence is felt on the west at the Pacific Ocean and to the east in the Sacramento Valley.

The river provides habitat necessary for the reproduction and rearing of anadromous fish which make up a portion of the commercial catch. After being stored in Clair Engle and Lewiston Reservoirs, Trinity River water is diverted through tunnel networks to the Sacramento River to aid in meeting the water needs in the southern parts of the state. In addition, these reservoirs, located within the Shasta and Trinity National Forests, attract thousands of recreationists each year.

The Trinity River itself attracts visitors who take advantage of its cool waters and scenic setting. This use, combined with the fall and spring anadromous fish runs draw many sportsmen to its banks. This use generates considerable benefit for the economy of Trinity County.

The Trinity River obviously influences numerous segments of the state; however, since the recreation area is situated in central Trinity County, population, economic, and other data is given in reference to Trinity County only.

C. Resources in the Management Area

1. Water Quality

The present water quality of the Trinity River below Lewiston Dam is satisfactory for all uses. The river, in its present controlled and regulated condition, runs low, swift, and clear along the reach from Lewiston to the junction of the north fork at Helena. The major impacts to the quality of the water are pollution emanating from commercial, residential, and recreational activities along the banks, along with heavy sedimentation discharge into the river from its tributary streams.

A major source of water quality degradation in the Trinity River in this area is Grass Valley Creek. The creek is a heavy transporter of sediments such as decomposed granitics and sand which empty into the river near Poker Bar. This has caused tremendous damage for miles downstream by filling in pools and clogging anadromous spawning gravels with sediments and organic debris. These fines have caused tremendous damage to spawning gravels and resting pools as far down stream as Weitchpec (personal communication, Ed Miller).

A major factor affecting the quality of Trinity River water is the substantial reduction in seasonal flow caused by the reservoir storage and transbasin diversion of a major portion of the Trinity River flow. These lower flow rates contribute to increased algae and vegetative growth by permitting a greater infiltration of sunlight.

The State of California, Department of Water Resources and USGS carry out water quality and temperature recording activities on the Trinity River at Lewiston, Burnt Ranch, and Hoopa. Other agencies are engaged from time to time in water quality monitoring on the many major tributaries important to fishery reproduction.

The major problems confronting the Trinity River appear to be granitic sedimentation, lowered and warmer flows, and gradually increasing pollution. The Grass Valley Creek situation has been under study for many years by the Department of Water Resources and the U.S. Soil Conservation Service. The balance of studies to date paint a less than bright picture for any effective solution through water rehabilitation. The most feasible solution proposed includes the construction of a debris dam at the sawmill site on Grass Valley Creek. Further study and cooperation will be required before this major problem can be effectively solved.

Water Projects

The Trinity River Division of the Central Valley Water Project of the U.S. Bureau of Reclamation was completed in 1962 with the construction of Trinity Dam, forming Clair Engle Lake (locally known as Trinity Lake) and its afterbay, Lewiston Reservoir. The project was conceived in the 1940's and authorized in 1955 to provide for storage and diversion of Trinity River water to meet demands in the southern Central Valley.

The Trinity River below Lewiston Dam is a component of the Lower Trinity River Division of the USBR North Coast Project.

Other alternatives included an "in-basin" storage plan consisting of two large dams located on the Trinity below the confluence with the north fork, Helena Dam, and the Schneiders Bar Dam further downstream. These reservoirs would have inundated nearly 60 miles of the Trinity River, along with substantial portions of its tributaries and all but decimated the remaining fisheries in the river.

Another alternative included a series of smaller dams and diversion tunnel systems to transfer Trinity River water to the other reservoirs and thence eventually to the Sacramento Valley.

The Bureau of Land Management produced an indepth study of the proposed projects in its Helena Project Impact Report of 1970, and concluded that they were environmentally unjustifiable. Various other agencies also produced similar policy statements and completed limited studies. Further study of these proposed projects has been indefinitely postponed by USBR in view of the conclusion that the immense environmental considerations outweigh the immediate development-produced benefits.

2. Geology

The Trinity River is etched over three principal geologic belts in the Klamath Mountain geologic province as it flows westerly from Lewiston. To the west of Lewiston Dam, the river cuts through a narrow portion of the Shasta Bally Batholith consisting primarily of Jurassic intrusive granitic rocks.

These materials are mainly hornblende diorite, quartz diorite, and grandiorite.

The river then enters the Central Metamorphic Belt which stretches westward for approximately 12 miles. It is composed of formations of pre-Silurian age and is considered one of the more ancient of northwestern California formations. The belt consists of the Abrams and Salmon formations which are predominantly hornblende schist, actinoliteepidote schist, and mica schist.

As the river turns to the north and nears Junction City, it enters the third major belt of rock, the Western Paleozoic, on which it flows for the next 20 miles. This belt is of late Paleozoic or Triassic age and is composed of slightly metamorphosed shales (slates), sandstones (slates), cherts, and greenstones, with some limestone lenses evident near Junction City and in the Hayfork Valley to the south.

3. Soils

Soils information for the Trinity River Area is available from the Redding Area Office, including a soil overlay and accompanying discussion of soil-vegetation associations. Another source is the soil-vegetation map published by the Pacific Southwest Forest and Range Experiment Station at Berkeley in 1975. Soils data is also available from the Soil Conservation Service.

The soils data is very detailed for most of the area but is lacking for the lands in the river reach from Junction City north to the site of old Helena.

Few generalizations can be made concerning the soil associations of the Trinity River Area. The soils of the canyon floor are primarily riverwash giving way to shallow to moderately deep soils on the mountain slopes. North facing slopes are more productive and diverse in their vegetative types than across stream southerly exposed sites.

On-site timber production capability ranges from unsuitable to medium on the deeper soiled northerly oriented slopes. Most of the terrace lands in the Trinity River Area are unsuitable for or of low potential for extensive range utilization. There are, however, several private land areas such as Lowden Ranch and some areas south of Junction City which do support moderate yields of herbaceous vegetation, especially with irrigation.

4. Minerals

The Trinity River area historically has experienced extensive appropriation of its mineral resources, particularly gold. Countless placer and dredging operations have been concentrated within the confines of the Trinity River Valley since gold was first discovered there in 1848.

Large amounts of placer gold production occurred on the low and high terrace gravels of the Trinity River and its tributary streams. Extensive hydraulic mining took place in the Union Hill and Weaverville areas with large amounts of lode gold being extracted in the Lewiston vicinity.

Many placer mining claims are recorded on public lands in the Trinity River Area, but the extent of their mineral production activity is unknown.

Limestone is present in very limited quantities and locations. It is utilized for construction, cement and decorative work. A known deposit is located on the Trinity River and stone for conversion to lime for brick making was extracted from the site around the turn of century. Present use and demand are virtually non-existent.

Sand and gravel are presently the leading commercial mineral materials extracted in Trinity County. Public construction is the major consumer of such material and due to the fact that the growth of the county is now relatively stable, the demand for such materials is rather low.

The Public Lands are not at this time a major source of this material nor will they be in the foreseeable future. Their main mineral value, however minor, will continue to be for gold prospecting and extraction.

Suction dredging and panning for gold is an increasing activity along the river and its tributaries at the present time.

5. Wildlife

The wildlife resources of the Trinity River and its adjacent land are quite varied and diverse. The open coniferous forest, woodland-grassland communities, and the aquatic environment provide habitat for many species.

The Trinity River Area is within the key winter range of the Weaverville black-tailed deer herd. The oak and chaparral covered hillsides at the lower elevations along the river valley provide the type of habitat and browse necessary to support a sizeable deer population.

Its relatively unencumbered environment provides the Trinity River Area with ample territory on which the deer can be supported for part of the year. This habitat is especially important since California Department of Fish and Game studies show a loss of nearly half of the carrying capacity of this critical winter range (excluding the Weaverville herd) through the inundation of Clair Engle Lake and residential subdivisions. The deer herd population level has been drastically reduced in response to this loss of habitat and is presently declining even further due to a number of other factors. Other game and big game species occupy the hillsides and valleys along the river. These include black bear, mountain lion, black-tailed jackrabbit, brush rabbit, and western gray squirrel.

Riparian vegetation has become established since development of the Trinity project along most of the streams in the plan area. This strip of vegetation is used as a foraging area and fawning area by deer. It also provides habitat for a large variety of other wildlife species.

Hunting pressure on the Trinity River Area public land parcels is light due to the severe topography and availability of other productive areas. Deer populations in the area may also be low during the early fall hunting season with the animals remaining at the higher elevations. Non-consumptive use (viewing, photographing) is made of this wildlife resource during the high visitor use season.

Other small game and nongame wildlife species may also be found on the Trinity River lands. These species include:

Furbearers

bobcat
coyote
skunk
ring-tailed cat
racoon
gray fox
marten
fisher
mink
river otter

Rodents

porcupine
ground squirrel
chipmunk
pocket gopher
field mice
wood rat

Birds, Waterfowl

valley quail
mountain quail
blue grouse
band-tailed pigeon
mourning dove
merganser
wood duck
turkey vulture
bald eagle

Birds, Waterfowl (cont'd)

golden eagle
red-tail hawk
osprey
Cooper's hawk
sharp shinned hawk
Stellar jay
sparrow
western tanager
great horned owl

6. Fisheries

The Trinity River supports a fair coldwater sports fishery. Steelhead trout, resident rainbow trout, brown trout, silver salmon, and king salmon are present in varying numbers throughout the upper reach of the river below the dams. For example, the "fly fishing only" as immediately below Lewiston Dam has received national attention. The fishery resource accounts for many thousands of fisherman activity days on the river each year. The Trinity is also an important source of salmon to the West Coast commercial marine fishing industry.

The construction of the Trinity River reclamation projects and the storage and transbasin diversion of a large percentage of the river's flow has resulted in substantial changes in the reaches downstream. Prior to 1981, the average annual flow had been reduced by 88% and excepting infrequent spills or flooding, peak discharges from Lewiston Dam averaged approximately 300 CFS. Project operations have thus turned a natural, high volume river into a relatively narrow and stable stream in the upper reaches. Flows in the lower river continue to fluctuate because of storm run off from several tributaries.

Formerly, the river's high flows washed out accumulated sediments and cleansed and deposited new gravel beds. The present reduced flows and subsequent reduction in sediment carrying capacity have impaired the ability of the river to perform these important functions.

In 1975, the Trinity River Basin Fish and Wildlife Task Force formed which included 13 federal, state, county, and local agencies. The major function of the Task Force was to formulate a long range management program to restore fish and wildlife resources. This plan has been completed and a bill submitted to Congress in 1983 for authorization and funding. The goals of this program are: (1) to utilize artificial production as compensation for salmon and steelhead spawning and rearing areas lost due to blockage of the Trinity River by the Lewiston Dam; (2) to restore full natural

salmon and steelhead production in the Trinity River and its tributaries downstream from Lewiston Dam; (3) to make fishery harvest management recommendations which are compatible with the goal of restoring full natural salmon and steelhead production in the Trinity River and its tributaries downstream from Lewiston Dam; (4) to provide compensation for deer and other wildlife losses resulting from inundation of land by Trinity River Project reservoirs; and (5) to recommend land management practices to restore and maintain watersheds in the Trinity River Basin. This river management plan is consistent with the Trinity River Basin Fish and Wildlife Management Plan of March 1982.

The Task Force, working through the California Department of Fish and Game, negotiated an agreement concerning minimal fish release requirements with the U.S. Bureau of Reclamation. U.S. Fish and Wildlife studies have shown that the increased flows have had a beneficial effect on fishery habitat in the Trinity River (letter from James J. McKevitt, 1983).

Following is a list of the arranged 1959 schedule and its modification in 1968.

CDFG and USBR Release Agreement

Trinity River CFS

	1959	1968
Jan - Aug	150	150
Sept	150	200
Oct	200	200 - 250
Nov	250	250 - 200
Dec	200	150
Total acre/ft	120, 600	120, 600

In 1981, Secretary of Interior Cecil Andrus made a decision to increase releases to the Trinity River. The current release is 286,000 AF/year until the basin is restored to accommodate 340,000 AF/year. Summer flows are 500 CFS with fish attraction flows of 800 CFS. Also in the Andrus' decision, flows would be reduced to 220,000 AF/year in dry years and 140,000 AF/year in critical dry years.

For a complete analysis of the fisheries problems and potential and recommendations for restoration, see "Proposed Trinity River Basin Fish and Wildlife Management Program", October 1980.

7. Climate

The climate of the Trinity River area between Lewiston Dam and Helena is generally mild, although warm summer and low winter temperatures are experienced. Due to its lower elevation, the river area is hot in the summer averaging in the high 80's and reaching 100°F for several days in succession. Winter temperatures frequently dip below freezing and spring temperatures are usually mild to cool.

Precipitation averages approximately 30-40 inches with about 85% falling from November through April. Rain may fall in limited amounts in the early fall and late spring months; however, there is typically a long rainless period each summer.

Winds are ever present due to the influence of coastal and passing storm fronts. Winter winds can be quite strong and gusty. Gentle summer winds, however, tend to moderate the hot temperatures found in the Central Valley to the east.

Humidity is generally moderate, varying from 40-80% throughout most of the year. Some periods in the summer may see extremely low 10-15% humidities in this area.

The climate is generally favorable for most recreational activities during the six month period from May to October. Camping, fishing, and picnicking are most popular during this period of pleasant weather. Fishing is, however, carried on to some extent throughout the year.

River rafting and canoeing are more dependent on water flow than weather considerations and the months of June, July, August, and September are most desirable. Water temperatures remain cool year-round in this reach, thus restricting more direct water contact pursuits to the warmer summer months.

8. Lands

The Trinity River Area Public Lands are characterized by a highly disassociated pattern. The balance of the river-front is privately owned by either Southern Pacific Land Company, subdivision and mobile park developers, or small private owners. Both large and small size parcels may be located along any stretch of the river.

Government agencies i.e., BLM and U.S. Forest Service, administer approximately 43 miles of bank on the forty (80 bank) mile section of the Trinity River which makes up the plan area. The public land parcels range from small isolated pieces to solid entire sections. The location and characteristics of these lands can best be ascertained by study of the accompanying status map (see Map 2).

Land use along the Trinity River is devoted to many different activities. The river lands have a high attraction for residential development in many areas due to the scenic beauty and proximity to population centers and primary roads. The frequent flat valley bottoms and alluvial terraces provide good areas for limited agricultural development.

Extensive development on the banks of the Trinity is limited to some degree by the ownership pattern, severe topography, and government regulation. On the other hand, a lack of strict zoning and the general availability of utilities and road access to these lands tend to promote increased residential and other development in this scenic area.

Trinity County has, however, prohibited residential construction on the portion of the river area below one foot above the 100 year flood zone. Also, the county has zoned the lands along the river as either Rural Residential (2.5 to 5 acre minimum parcel size) or Resource Uses (which includes BLM and large private landholders).

As a whole, this 40 mile reach of the Trinity River is moderately developed, particularly on the eastern or upstream reaches (see map 3). Other less obvious land uses such as mining claims are present in varying densities along the river.

The accessibility of the Trinity River is good in the planning area. Highway 299 parallels approximately 10 miles of the river. There are only four miles of the river that cannot be driven along on a developed road on at least one side.

Recreational access is very good in the Lewiston, Steel Bridge, Bucktail Hole, and Steiner Flat areas. Access is satisfactory in the Evans Bar to Junction City area via a paved county road on both sides. The Hayfork-Junction City road runs parallel and about one-half mile above the river on the west side.

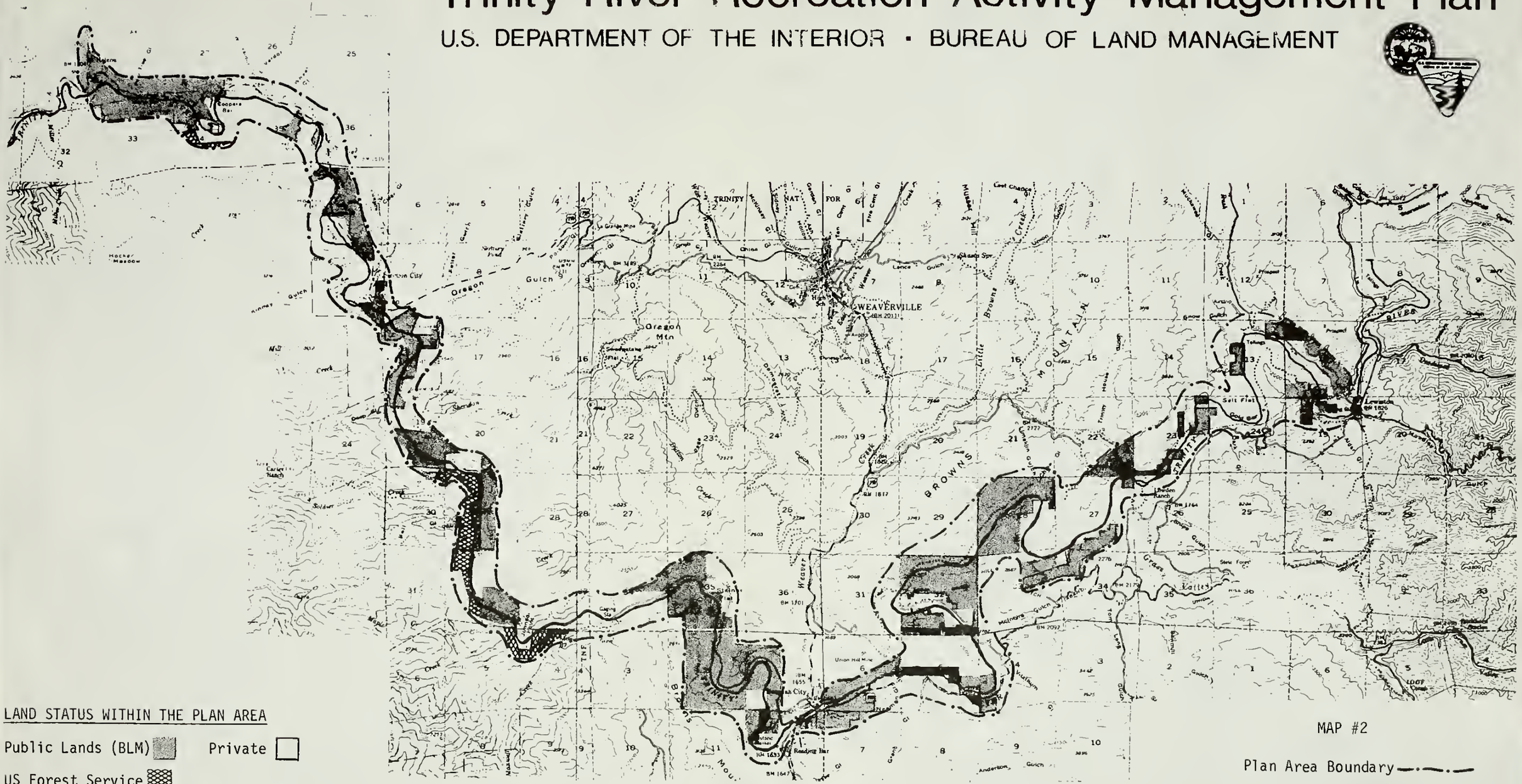
Access is obtainable by the Dutch and Browns Creek jeep trails in the Johnson Point area. Severe topography limits opposite bank access in the Douglas City-Steiner Flat and Helena areas.

Private access roads and bridges provide a few persons with good river access in the Rush Creek, Gold Bar, and Poker Bar areas.

The California Department of Water Resources has prepared a comprehensive listing of access points to the Trinity River in a booklet entitled Trinity River Recreation Access (1979). This booklet includes narrative descriptions of existing access points keyed to aerial photographs of the river area.

Trinity River Recreation Activity Management Plan

U.S. DEPARTMENT OF THE INTERIOR • BUREAU OF LAND MANAGEMENT



LAND STATUS WITHIN THE PLAN AREA

Public Lands (BLM) ▒ Private □

US Forest Service ▩

Non-Federal Public (State,County,Etc.) ■

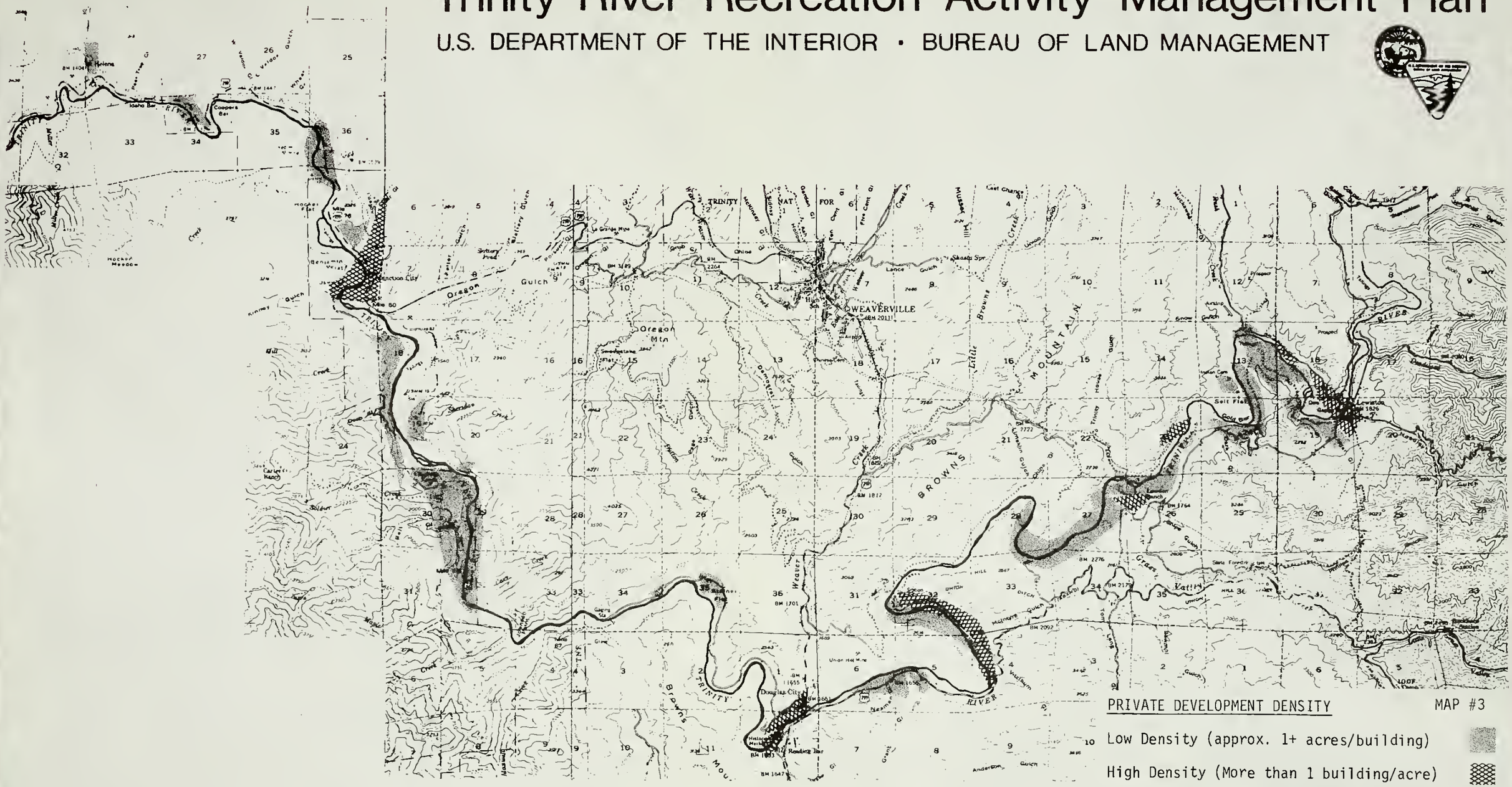
MAP #2

Plan Area Boundary —·—·—

0 1/2 1 2 3 MILES

Trinity River Recreation Activity Management Plan

U.S. DEPARTMENT OF THE INTERIOR • BUREAU OF LAND MANAGEMENT



The following land statistics were determined for that area within a quarter mile corridor on both sides of the river. Although BLM does administer much other land contiguous or adjacent to the blocks actually on the river, most is too distant to be much of an influence on the recreational aspect of the river, although it does provide scenic resource protection.

The BLM administers about 40% of the banks of the Trinity River. The total land area within 1/4 mile of the river is approximately 8,500 acres, of which approximately 3,300 acres are BLM administered lands.

TRINITY RIVER LAND STATISTICS
LEWISTON-NORTH FORK

Total Miles	Miles BLM	% Miles BLM	Total Acres	Private	Other Public	Acres BLM	% Acres BLM
40	16	40	8,500	4,595	605	3,300	38

The BLM administered Public Lands along the Trinity River are affected by a variety of classifications and land orders. Most of these lands are classified to be retained for multiple use management in accordance with the Act of 1964. The lands classified for retention are segregated from appropriation under the Agricultural Land Laws and from sale under R.S. 2455.

A majority of the river lands are not segregated from appropriation under the General Mining Laws and are open to the filing of claims and extraction activities. The two developed recreation sites at Douglas City and Junction City are under withdrawals for protection of the recreation values totalling 59.98 and 59.02 acres respectively. The semi-developed Steel Bridge recreation site is retained for multiple use management, but is segregated from mineral entry.

Another type of withdrawal is for power sites. There are approximately 2,600 acres that were withdrawn many years ago by the Federal Power Commission with most of them located along the Trinity River and a few on the main tributaries such as Indian, Reading, and Canyon Creeks.

The Trinity River Area contains numerous less-than-fee power line and road rights-of-way.

Unauthorized use of public lands is a major problem on the Trinity River Public Lands. Large homes or small cabins may be located on Public Lands potentially precluding recreation and other resource management programs from initiating action on the land. The lack of adequate survey documentation and the unknown boundary lines of public lands is a major problem limiting recreational use along the river. The survey problem is presently being evaluated.

9. Socio-Economic Factors

Trinity County represents an area of 2,042,240 acres in the rugged mountains of northwestern California. The Trinity River originates and flows through the county for a distance of approximately 140 miles, including all the reach considered in the plan.

The county's rugged topography, large proportion of government land, and utility and transportation limitations have served to cluster the population into five small semiurban areas. These areas are Weaverville, Hayfork, Lewiston, Douglas City, Junction City and Trinity Center.

The towns of Weaverville, the county seat, and Hayfork are removed from the Trinity River Area and thus do not affect the river directly. They do impact the river indirectly by producing a need for construction materials, recreation areas, utility corridors, and the desire of persons to live apart from such developed areas.

The other three towns are located directly on the Trinity and thus exert certain influences upon it. The town of Lewiston is located on the river just below its point of emergence from Lewiston Dam. It was once a bustling construction town, but now is primarily a residential community and recreational trade center.

Douglas City and Junction City presently serve as small commercial trade centers with small nearby residential developments. These towns will probably see further growth in the future as commercial needs increase due to increased settlement in their immediate areas.

The county as a whole is projected to experience slow growth in the future as compared to other areas of the north state. Most of this growth will undoubtedly occur principally around the presently established towns in the valleys.

The economy of Trinity County is relatively stable but depressed at this time. Government service is the most important facet of the economy. The lumber industry is a strong influence and the lumber products establishments are very important employers. The combined lumber and wood industry employs over half the non-government work force.

Retail trade is a strong component of the economy due especially to the infusion of the tourist dollar. Mineral production was once a major facet of the economy as the area was a focal point for gold mining from 1848 to the late 1940's. The value of mineral products in Trinity County has fluctuated considerably in recent years but is usually between $280,000 and $300,000 per year with stone, sand, and gravel materials being the primary products.

Due to the rugged topography, agriculture is not extensive. The amount of irrigated land and harvested cropland is very small. The value of all agricultural production is about $1,122,520 with the major proportion of farm income from livestock. The valley areas of Hayfork, Hyampom, and Zenia in southern Trinity County are the principal cropland areas. Grasslands in the southwest and north-central county are utilized primarily for grazing. This activity is especially prevalent in the Hayfork, Brown-Reading Creeks and Trinity River plain area at Poker Bar.

Recreation and tourism is an extremely important contributor to the Trinity County economy which might reach primary importance if its season can be spread over a longer time span and the total number of visitors increased.

The County's three man-made reservoirs, Clair Engle, Lewiston, and Ruth, draw many recreationists. The National Forest lands which comprise nearly 66% of the county and include the Trinity Alps Primitive Area and the Yolla Bolly Wilderness Area also serve as popular destination points for recreationists from all of California.

Future economic growth is projected for the recreation and retail trade sectors of the economy. The lumber industry is seeing increased hauling of timber to wood product plants outside the local area, thus deminishing the jobs available. The other major sectors of the economy will remain static for the most part (General Plan, Economic Report).

The river now provides economic benefits indirectly by attracting large numbers of tourists to its two reservoirs or its own banks for recreational pursuits. It also serves as a source of domestic water, irrigation water, and a thin belt of aesthetic and scenic naturalness among the evidence of man's development of the land. Land along the river has a high value for recreational homesites due to its scenic qualities. The public lands also serve the local populace as nearby recreation areas.

10. Cultural Resources

The Trinity River area was inhabited by moderately dense levels of native peoples. The Northern Wintu, Chimariko, and Hupa lived along the river within separate territories east to west respectively. The moderate climate combined with the dense vegetation and abundant streams were conducive to rich plant and animal foodstuffs for these people.

The area within the 40 mile study reach was inhabited primarily by the Trinity Wintu composed of small tribal units located throughout the drainage. The entire territory of the Chimariko Indians in

historic times was the 20 mile stretch of the Trinity River canyon from French Creek to the confluence of the south fork. The Hupa lived along the Trinity in the area near the junction of the Trinity and Klamath Rivers.

These Native American groups depended upon the annual river runs of king salmon for their principal subsistence. They characteristically lived in compact villages and utilized plant resources seasonally. Groups had a preference for locating village sites at the confluence of tributary streams.

Their major subsistence came from the river, streams, and the immediately adjacent valley bottoms and hillsides. When the salmon runs were sufficiently large, fish made up a large portion of the diet. Acorns were the most important plant food, with other seeds, shoots, and roots also used. Hunting was secondary to fishing with deer and small game adding to the diet in the spring and summer.

Population estimates are sketchy but the Wintu tribal groups probably numbered around 600 in this reach and its adjacent tributary drainages. The Chimariko tribe on the aforementioned reach below Helena numbered around 250 at its peak in 1849 and is now nearly extinct. The Indians along the Trinity were utterly wiped out due to hostilities between themselves and the miners and through the agency of introduced diseases.

Due to the fact that the Indian groups largely avoided hillside village and camp locations, the extensive mining activity, river flooding, and recent development have destroyed a great many riverside sites. The prehistoric sites remaining are mostly those situated either on the high terrace bluffs or tributary banks, and consist of occupational deposits or scatter of stone tools and toolmaking by-products.

It should be pointed out that there are a number of large flats, in particular in the vicinity of Junction City, that probably at one time had aboriginal sites on them. In this area a system of mining was employed whereby the loose earth and gravel were removed from the flats to expose ore-bearing veins in the bedrock. Also, the extensive drifts of gravel from dredging and placer mining have covered and/or destroyed original land surfaces.

There are a number of areas of historical importance within the plan area. One of the most important of these locations is the location of the first "Arkansas Dam", the point where gold was first found in Trinity County and the historic rancheria. The location of the "Arkansas Dam" was probably in the vicinity of the Chapman Ranch. There is a historical marker at Reading Bar commemorating the first discovery of gold in Trinity County. Extensive tailings and workings in places exhibit detailed architectural configurations.

There are numerous cemeteries within the area, most of which are associated with present towns and are marked on the USGS maps. A single grave was located near the mouth of Oregon Gulch. The grave is marked "Col. H. Seelye, 1793-1857".

During the surveys for the Trinity and Lewiston Reservoirs in 1952, a number of archaeological sites were located which fall within the limits of the plan area (Treganza 1958).

11. Threatened and Endangered Plants

There are no federally or state listed threatened or endangered plant species within the plan area. One candidate Fish and Wildlife Service plant species is known to occur near the North Fork confluence at Helena.

This species is:

Lewisia cotyledon subsp. fimbriata: Fringed lewisia

Status: Fish and Wildlife Service candidate (45 FR 82518)

Habitat: Fissures in metamorphic rock outcrop, 1,400' elevation.

Location: Approximately 1/4 mile south of Helena.

12. Visual Resources

The Trinity River and the public lands within the river's corridor possess outstanding natural beauty and scenic quality ranging from the immediate sensations of rushing water through narrow canyons to distant vistas of the Trinity Alps. Recreation use is high along the entire stretch of the river, including activities such as canoeing, rafting, fishing, swimming, and even panning for gold. The river and the scenery have traditionally attracted a variety of users.

Analysis of the visual resources of the Trinity River reveals three separate areas reflecting varying landscape characteristics. Each section is individually distinct due to varied landscape features, such as landforms, vegetation, water characteristics, etc., or the extent of physical development along the river's banks. Intermittently along the river there are piles of dredge tailings and rocks reminiscent of past mining.

A portion of the river segment between Lewiston and Douglas City parallels State Highway 299. Riparian vegetation along the river's bank is dense, focusing views on the river itself and screening the highway from view. Further emphasis is placed on the river corridor by surrounding steep canyons and narrow valleys. Views outside the corridor are limited, but where vistas do occur, distant peaks of the Trinity Alps and Marble Mountains are impressive. This section is the most highly developed. Intrusions of homes and other developments scattered along the highway and in the flatter areas diminish the scenic quality to some degree.

The middle section of the Trinity River reaches from Douglas City to Oregon Gulch. Development, for the most part, is limited to the Steiner Flat and Chapman Ranch area. Willows, fir-pine, alder, fields, and oak grasslands compose the major vegetative types. Landforms range from flat to steep, with none particularly memorable other than the frequent dredge tailings. Old cabins and ranches dot the valley bottom adding considerable rustic character to this middle section of the river. Views are mostly enclosed with occasional vistas to Tunnel Ridge and outlying ridges and peaks.

The final section of river dealt with in the plan runs from Oregon Gulch where the landforms open into a broad valley, to Cooper's Bar, where the topography closes on the river, then on to Helena and the North Fork confluence. Vegetation is varied, ranging from riparian species to upland conifers and brush. Junction City and scattered houses/commercial establishments are the most apparent modifications with roads and tailings also prominent. Landform features include redbank type placer mines, tailings, and massive ridges. Views open from the river to Weaver Bally, the Trinity Alps, and outlying mountains. Highway 299 follows the river through this section. Recreation use is again very high along this stretch of the river.

Scenic quality throughout the entire Trinity River corridor is rated as High, Class A. User sensitivity is also rated as High based on user attitudes and use volume. The river corridor is viewed constantly as foreground, either from the river itself or from those portions of Highway 299 that are parallel to the river. Based on scenic quality, user sensitivity, and distance, the Public Lands within the Trinity River corridor are managed with the objectives of the Visual Resource Management (VRM) Class 2. The goals of VRM Class 2 are that changes in any of the basic landscape elements (form, line, color, and texture) caused by a management activity should not be evident in the characteristic landscape. Contrasts may be seen, but must not attract attention.

D. Recreation Use in the Management Area

1. Background

In 1977, the California Department of Water Resources conducted a survey of recreation uses along the Trinity River between Lewiston and the North Fork over the period from Memorial Day weekend to the Labor Day weekend. This survey measured 73,000 "recreation days" or 175,000 recreation hours. Eighty percent of this use involved camping (48,700 hours), swimming (47,100 hours), fishing (43,500 hours) and relaxing (21,500 hours). While this survey is the only

intensive recreation use survey conducted within the plan area, it must be recognized that river flows were unusually low due to a drought, and that the survey was limited to a 101 day period on an area which receives year-round fishing use and very heavy fall camping use during the deer hunting season. The survey does, however, provide valuable camparative data and is therefore used as the baseline for this use analysis.

No other data which applies specifically to the plan area was collected until the summer of 1982, when recreation use was measured at nine locations over the same period as used in the 1977 survey. Additional use data was developed from campground fee collection records and use records associated with Special Recreation Use Permits issued to commercial river outfitters.

Trinity River Recreation Use and Projections

Activity	Use in Visitor/Recreation Hours		
	1977*	1982	1992
Camping	48,700	255,000	341,700
Fishing	43,500	143,800	192,690
Relaxing	12,000	73,880	99,000
Picnicking	9,500	12,240	16,400
Boating	3,100	16,620	36,500
Swimming	47,100	1,930	2,680
Miscellaneous	11,100	12,750	17,000
Total Visitor Hours	175,000	516,220	705,970

* 1977 Department of Water Resource Survey

2. Activity Preferences and User Profile

a. Camping

Camping is by far the most popular activity within the river corridor, accounting for approximately 255,000 visitor hours of use per year. Camping peaks in August and October, and diminishes considerably over the winter months, from late December through March. Most campers are repeat visitors who annually visit the area from relatively distant points of origin, including Idaho, Oregon, and southern California. Each of the campgrounds has a more or less distinct clientele. For example, Junction City Campground receives primarily overnight visitation by travelers stopping briefly enroute to some other destination. Douglas City Campground, on the other hand, is the destination for most of its users, who generally stay from several days to two weeks at a time. These visitors are for the most part middleaged or older and are interested in camping for its own sake. Steelbridge Campground attracts visitors who prefer a more primitive setting, and are

usually more concerned with pursuing a combination of outdoor recreational activities, such as fishing, swimming, gold panning, etc., than with simply the camping activity. They are generally younger than the Douglas City campers and appear more interested in exercising self reliance. The Steelbridge Campground received considerably heavier use over the 1982 season than in years past. Increased fees at Junction City and Douglas City campgrounds may have been a major contributing factor.

Camping on undeveloped public lands in the area has been popular for years with most use occurring north of the Bucktail Hole facility and in the Steiner Flat Area. Trinity County has actively discouraged such camping near residential areas along the river. In 1981, the Bucktail area was closed to camping; however, a very active enforcement effort was needed to keep campers from using this area, in spite of the prolific "no camping" signing. The dispersed campers are generally equipped with motorhomes or pickup campers, and have no real need of campground facilities since they generally use self-contained "housecars", complete with toilet facilities. Some of these visitors will, if allowed, camp on an undeveloped area near the river for months at a time, and seem to view the area as a summer residence.

b. Relaxing

Most visitors to the plan area spend a major portion of their time passively enjoying their surroundings. All that is required is a peaceful, reasonably secure and aesthetically pleasing setting. Usually some interest holding activity is occurring within view, such as children playing, anglers playing a fishing line, friends or other visitors socializing or the water flowing past in the river; however, physically active involvement is neither necessary nor desired. Relaxing accounts for an estimated 73,880 recreation hours use annually in this area.

c. Fishing

Fishing is a primary attraction in the plan area. Sport fish include brown trout, silver salmon, king salmon and steelhead trout. While most fishing occurs during the fall salmon and steelhead runs, there are lesser runs during spring and summer, and fishermen can be found on the river at virtually any time of year. During the summer and early fall months, popular fishing access points such as Bucktail Hole will be crowded with fishermen until midmorning, but by late morning, fishing for the day has usually ended. Most of the fishermen using this area are local or regional residents, living within 100 miles of the river. Annually, fishing accounts for an estimated 143,800 visitor hours per year within the plan area. Most fishermen appear to fish this river individually or in groups of two.

d. Boating

Boating on this reach of the Trinity occurs primarily during the summer months (June through September) when air and water temperatures are relatively warm. Water temperatures are fairly cold year-round near Lewiston Dam; however, during late summer the river downstream becomes warm enough for tubing and swimming. This river reach is suitable for inflatables (rafts) most of the summer and can provide excellent open canoeing opportunities if the release from Lewiston Dam is over 400 cubic feet per second (CFS). Flows below this level can be difficult due to the amount of exposed rock, often requiring portages to avoid damage to boats. There are very few places suitable for even small power boats due to the abundance of small rapids and shallow riffles. Under the International Water Classification System, the river rates as Class 2½ between Lewiston and Douglas City at 550 CFS. Between Douglas City and Junction City, it is considered Class 2 at 600 CFS, and downstream from Junction City to the North Fork confluence, it is rated as Class 1½ at 1,000 CFS.

Generally speaking, while kayakers could easily float this river in the plan area, they prefer more challenging whitewater, which is readily available further downstream.

The river reach is becoming increasingly popular for canoeists and commercial rafting parties. One company provides rental canoes and shuttle service for the Trinity based out of Redding.

During the 1977 survey, a total of 3,100 recreation hours of boating were recorded. In 1982, 16,620 recreation visitor hours of boating use were recorded (excluding tubing), primarily due to marked increases in commercial raft trips. Only 8% of the total recorded use was by private groups or individuals.

Most of the rafting use originated through trips drawing clientele from the San Francisco Bay area. The majority of the canoeists originated from the northern California-- Redding area. Raft groups usually involved five or six boats, while canoe groups averaged two to three boats.

As this river reach becomes better known, substantial increases in boating activity can be expected.

Tubing is popular over most of this river reach in later summer. Most tubers make repeated runs down a short section of the river, either walking back upstream to repeat the run or using a vehicle shuttle. Popular public land areas for tubing are Lewiston (Rush Creek), Steelbridge, Douglas City and Junction City. Tubers are for the most part school age and young adult local people.

e. Swimming

The 1977 Dept. of Water Resources Survey counted 47,100 recreation hours of swimming on this river reach. The 1982 BLM use survey indicated substantially lower numbers of visitors engaging in this activity (estimated 1,930 visitor hours) on public land portions of the river. Two factors combine to explain this disparity. First, most swimming occurs at beaches, near Junction City and Douglas City, which are located on private lands. While Douglas City Campground has a beach, the current at this point on the river is relatively swift, so swimming there is strenuous. Also, during the 1977 survey, river flows were very low, providing both warmer water and more areas of relatively slow-moving water.

f. Picnicking

Picnicking was identified as a distinct activity at three locations (Douglas City, Junction City and Steelbridge Campgrounds) which have facilities to support this activity. Picnicking occurs primarily during the summer season, and picnickers come mostly from northern California, residing within less than 60 miles of the plan area. These tend to be single family groups who visit the area for the day. Some other activity, such as fishing or tubing, is usually associated with picnicking. An estimated 12,240 visitor hours of picnicking occurred on public lands within the plan area during the 1982 use season.

g. Miscellaneous Other Activities

Many other recreational activities occur within the river corridor on public lands, including bicycling, horseback riding, hunting, nature study, recreational mining, hiking, partying, berry collecting, and photography. These uses amount to an estimated additional 12,750 recreation hours of use within the plan area each year.

h. Casual Sightseeing

Casual sightseeing, for the purposes of this analysis, is sightseeing by operators and passengers in vehicles travelling on roads from which the plan area is visible in the foreground, middleground and background. U.S. Highway 299 passes over or near the public lands within the plan area for a distance of approximately 12 miles. Assuming an average daily traffic volume of 2,000 vehicles, and an average of 2 occupants per vehicle, 1.46 million people see parts of the plan area each year. If each person sees these lands for an average of 12 minutes, then an average there would be approximately 292,000 visitor hours of casual sightseeing from vehicles moving along U.S. 299 each year. Because these people have virtually no choice in scenery selection while travelling, it is unrealistic to count them among the numbers of public land user types identified in this analysis. On the other hand, many people

travelling through this area feel that the quality of the scenery enhances the travelling experience, so it would be equally unrealistic to totally discount casual sightseeing as a valueless activity. This use must be recognized, however, as a use separate and distinct from uses which can be actively managed or planned for within the scope of this planning effort.

3. Factors Affecting Use Over Time

a. River Flow Levels

The single most significant factor affecting recreational uses on the Trinity River is the flow regime over the late spring, summer and early fall months. Flows under 450 cubic feet per second (CFS) will seriously limit the attractiveness of this river for boating and most fishing. Use would shift toward swimming, as it did during the 1977 drought. Fluctuating flows would tend to limit both boating and swimming, since the public, commercial outfitters, etc. would not be able to rely on the river presenting a predictable character.

If summer flows (releases) are stabilized near 500 CFS, then boating use can be expected to increase dramatically, because the desirable flow levels could be expected for any boating visit. Commercial outfitters, guides and livery services would have a reliable resource base upon which to build viable businesses. At the same time, as other western rivers continued to serve increasingly fewer of their potential users because demand has surpassed available use allocations, the Trinity would become an increasingly desirable alternative river for floating.

Stabilized flows of 500 CFS would improve the anadromous fishery also, and with this improvement fishing success should improve correspondingly. The Trinity could then attract greater numbers of anglers, both locally and regionally.

b. Facility/Access Developments

Outdoor recreation demand tends to closely follow the supply of recreation experience opportunities and the facilities, management actions, etc., which support those opportunities. Any change in levels of development, access points, distribution of facilities, availability of information or management intensity, will be followed by changes in visitor use numbers, distribution and types.

E. Major Issues

The issues identified through meetings with the general public, other agencies, and through staff participation have been grouped into three broad categories in order to clarify the type of action opportunity which would be most appropriate for dealing with the issue. These categories are derived from the settings utilized in the Recreation Opportunity Spectrum (ROS) system. It is assumed that although there may be overlap between these settings, one or another setting will provide the most effective framework for addressing each specific issue. The settings are the social setting, physical setting and managerial setting. Refer to Appendix D for additional information concerning the ROS system.

Social Setting Issues:

S-1: Trespass. Due to the intermingled pattern of public and private lands throughout the river corridor and the lack of clearly delineated boundary lines, there is considerable trespass, both accidental and intentional, on private properties adjoining public land parcels. There is also a problem with private landowners enclosing nearby public lands or erecting structures without authorization on public lands. A third common type of trespass involves unauthorized use and occupancy of public land areas by visitors to the river area, which includes such things as illegal vegetative and mineral material extraction, unauthorized residences and unauthorized commercial outfitter operations.

S-2: Public Land User Conflicts. Certain public lands users conflict with one another because they wish to pursue activities which are not compatible on the same piece of land or water. For example, fishermen and swimmers cannot both use the same pool safely, at least at the same time. This usually results in one type of recreationist displacing the other. The displaced visitor naturally resents the interference, and conflict can easily result. As river use of all types increases, it can be expected that conflict between different types of both recreational and nonrecreational visitors will increase, along with competition for space among like land users.

S-3: Camping. Camping takes many forms along the river, and, more than any other recreational activity, affects the river environment. Public input concerning camping has been diverse. Camping will also be addressed in the physical and management issue sections. From the social setting perspective, careless camping, resulting in increased risk of wildfire from inappropriate campfires, and water pollution, resulting from improper waste disposal, were identified as significant problems along the river. Also, the habit of some campers of occupying important river access points for extended periods, resulting in the exclusion of other river users, was identified as a problem.

S-4: Carrying Capacity. Public input indicated that the river's carrying capacity for various recreational uses had not yet been reached: however, limits should be determined and this plan should address both facility needs and management for dealing with the anticipated use levels.

S-5: Off-Road Vehicle Use. Respondents felt that off-road vehicle use should be restricted to nonerosive soils and should be excluded from areas containing decomposing granite soils.

S-6: Recreational Mining. Concern was expressed over conflicts between mining claimants and recreational (hobby) miners dredging or panning on other people's claims. Also, a need to define and manage for recreational mining was identified.

Physical Setting Issues:

P-1: Access. The need for additional river access points and specialized facilities was identified several times during the issue identification process. Improved access for fishermen and boaters, including parking for vehicles and launch ramps, was of particular concern. It was suggested that a parking area, launch ramp, toilets and campground be developed at the North Fork confluence near Helena.

P-2: Campgrounds: Several commenters suggested that additional primitive and use fee type campgrounds be developed along the river to help control the adverse environmental impacts created by random camping in areas such as Bucktail Hole, Steiner Flat and Oregon Gulch.

P-3: Pit Stops. Several respondents identified a need for regularly spaced "pit stops" with garbage collection and toilet facilities for use by float boaters. They felt these were especially important immediately upstream from rapids, because trash could be off-loaded from boats prior to their being possibly capsized, spilling loose contents into the river.

P-4: Land Exchanges. Several private landowners along the river have expressed interest in exchanging riverfront property for lands outside the river corridor in order to acquire lands more useful for their personal goals. This issue is closely related to issue S-1 (Trespass) because in some cases, the landowner who desires the exchange owns lands which contain popular recreational attractions (swimming holes, fishing). These landowners have been unsuccessful in excluding public use (trespass) and face potentially serious liability problems. The lands involved, are, for the most part, situated within the river floodplain and not suitable for development; however, they could provide additional legal public access to the river.

P-5: Silt Deposition and Spoil Disposition. Silt deposition, especially below Grass Valley Creek, has seriously impacted the spawning habitat for anadromous fish. The salmon and steelhead sport fishery is a major recreational attraction and was the major factor influencing designation of the river as part of the Wild and Scenic River System. Removal of silt deposits was felt to be a major opportunity for cooperative agency efforts. While the need to dredge out silt deposits is well established, concern was expressed that the spoils from these operations not be dumped on potentially significant cultural sites or historically valuable sites along the river which contain good opportunities for interpretation.

P-6: Historic Sites. Several historic sites were identified as desirable interpretive opportunities. These included the Bagdad Townsite/Chimariko Tribe trading center, Limekiln Gulch and the dredger tailings complex near Lowden Ranch.

P-7: Trails. A desire for streamside trails for hiking and fishing access was expressed by several respondents. Suggested locations included from Steelbridge Campground to Limekiln Gulch and from Douglas City Campground to Steiner Flat. A desire to use riverside trail construction as part of an environmental education program with the local schools was also expressed.

P-8: Mini Hydroelectric Projects. Concern was expressed that mini-hydro projects located on tributary streams might adversely impact the river environment. Those who expressed an opinion felt such projects should be completely excluded from the river corridor.

P-9: Instream Hazards. Public input indicated a desire for the BLM to mitigate instream hazards, ranging from broken glass to fallen trees. In many cases the known instream hazards are not located on public lands. Several people felt that the Bureau should take a leadership role in coordinating instream hazard reduction, regardless of the land ownership involved, by arranging cooperative actions with the landowners involved.

P-10: Pumphouses. Many residents near the river draw their domestic water directly from the river. Doing this usually involves pipelines and separate pumphouses for each residence. While the presence of such structures is not actually incompatible with the "Recreational" river designation, it was generally felt that efforts should be made to make these structures less obvious, or more compatible with the natural appearing landscape visible from most of this river reach.

Management Issues:

M-1: Data Base Development. A need to develop and maintain a recreational use data base was identified as a primary source of

information to use to evaluate the impacts of other agency and other BLM actions affecting the river. Of particular concern was the effect of river flow fluctuations on various types of recreational activities.

M-2: Withdrawals. Some respondents felt that recreational mining areas should be established by withdrawing certain areas from mineral entry, then making them available to hobby prospectors.

M-3: Information/Maps/Signs/Brochures. Many respondents felt the Bureau should develop a river map or brochure, showing river access points, historical sites, waste disposal points, scenic areas, important natural features, land ownership, whitewater opportunities and camping areas. There was a suggestion that the BLM and USFS cooperatively develop such a map or brochure covering the river between Lewiston and Weitchpec.

There are also several comments concerning signs. There was general interest expressed in an on-river sign system which would identify public land boundaries and the public facilities such as toilets and access points to boaters while floating on the river. There were also indications that the Bureau should concentrate its recreational management effort on the whitewater boating experience opportunities available on the river.

M-4: Pesticides. The local residents who participated in the public meeting all felt the BLM should not use any herbicides or insecticides in any land management practices within the river corridor. Several people were concerned about possible contamination of domestic water drawn directly from the river by nearby residents.

M-5: Camping Restrictions. Many respondents felt that the Bureau should prohibit camping outside of developed campgrounds. Others felt that camping opportunities in primitive campgrounds should be expanded to insure availability of toilet facilities and that camping where no toilet facilities were available should be prohibited. Others felt that there should be no restriction over camping on undeveloped public lands in the river corridor.

M-6: Cooperative Agreements/Memos of Understanding. Several multi-agency management enhancement opportunities were identified, including cooperative commercial outfitter permit management between BLM and the Forest Service, enhanced law enforcement agreements with the Trinity County Sheriff, support of the Sheriff's Search and Rescue function, and cooperative preparation of a programmatic environmental impact report to support the efforts of the Trinity River Task Force in sediment disposal.

M-7: Volunteers. It was suggested that BLM fully utilize the volunteer support potentially available from local civic groups and service organizations in implementing portions of this plan, and that the plan address what recreation management tasks should be handled through the use of volunteers.

Part II Management Objectives and Constraints

A. Recreation Management Objectives

Legislative, regulatory and policy constraints which would apply to the planning area are listed in the planning criteria document of the 1982 Redding Land Use Plan. The Land Use Plan further defines the objectives and constraints for the Trinity River management prescription area as follows:

Objective: The objective of this prescription is the management of the public lands within the parameters of the Wild and Scenic Rivers Act (WSRA) (P.L. 95-625).

Land Use Allocation: Manage the public lands for their recreation, cultural, wildlife, timber and visual values. The objectives and goals of this prescription are consistent with the river designation and the goals of the Trinity River Task Force. They are also consistent with local concern of land use plans and the economic dependence of the area on the recreation and wood products industries.

Standards and/or Guidelines: Maintain a Roaded Natural ROS Class (see Appendix D). Maintain VRM Management Class II (see Appendix A). Retain and maintain the existing developed sites (Douglas City, Junction City, Steelbridge and Bucktail Hole) at a level consistent with the existing ROS class. Timber Harvest levels shall be consistent with the Record of Decision for SYU-15, dated 9/30/81. Harvest levels were reduced 20-30 percent in the decision to benefit recreation and visual resources. These goals shall be in accordance with a "Recreation" designated river in the Wild and Scenic Rivers Act.

Goals: The primary goal is to protect and enhance existing recreation values and provide opportunities for engaging in waterbased recreation activities dependent on or enhanced by the largely free-flowing nature of the river, while emphasizing compatible cultural, fisheries, timber, wildlife and visual management. The parameters of the "Recreation" river designation under the Wild and Scenic Rivers Act are generally consistent with the Roaded Natural ROS Class, which can be defined by describing the associated experience, setting and activity opportunities as described in Appendix F.

B. Other Recreation Related Land Use Plan Decisions.

1. Off-Road Vehicle Use

Off-Road Vehicle (ORV) use shall be limited to designated roads and trails throughout Trinity County. Roads and trails across decomposed granite soils and the Camp Gulch access road in T. 32 N., R. 9 W., MDM, shall be further limited to use during April 1 to October 15 (ORV use shall not be permitted October 15 through April 1). The exception to this is the Indian Creek Townsite (T. 32 N., R. 9 W., MDM). This area shall be closed to ORV use. Designate during FY83. Implement designation in FY84.

2. Visual Resources

The Trinity River Zone (see Management Decision Overlay, R-1) shall be managed primarily for its visual resources. Maintain Visual Resource Management Class II (9,103 acres).

Part III The Management Program

Each issue previously identified was reviewed to determine possible resolutions through the application of ten possible management action types. These were: (1) land tenure adjustment; (2) special designations or withdrawals; (3) visitor services and resource protection; (4) information and interpretation; (5) special area or use permits; (6) cooperative agreements, memos of understanding and volunteer programs; (7) resource manipulation or rehabilitation; (8) special rules or regulations; (9) site or facility development; and (10) restrictions on other programs.

In order to avoid relisting the 23 major issues the management program addresses for each of the applicable management action categories, the issues will be identified by the alpha-numeric code shown in Part I (E) of this document. For example, Physical Issue #1, dealing with the problem of access shortages, will be identified as P-1 wherever it has been addressed in a management action listed in this part of the plan.

Administration and maintenance of this area are addressed following the issue oriented Management Actions, as separate sections (K and L) of this part.

A. Land Tenure Adjustments

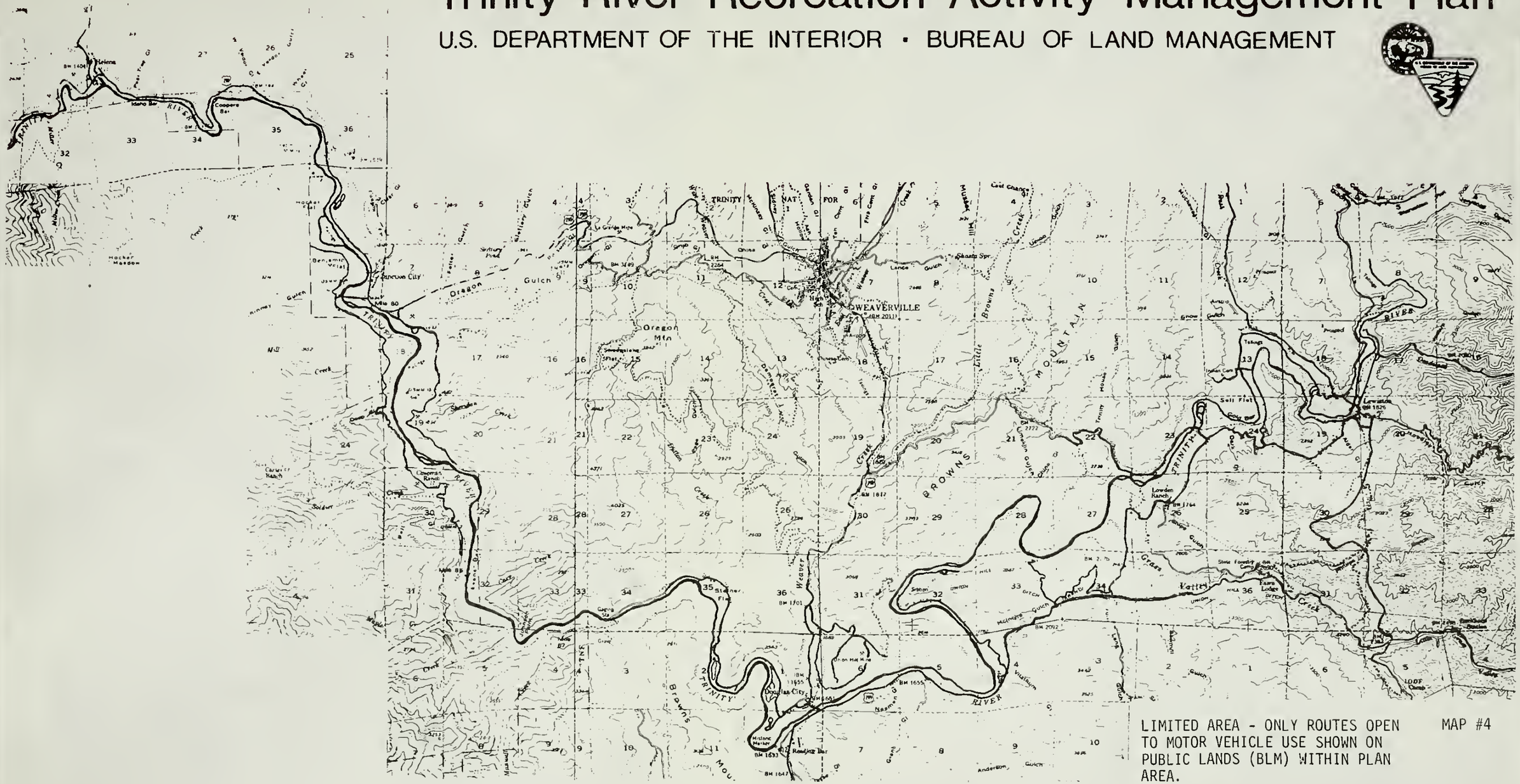
Issues addressed: S-1, 2, 3, 6; P-1, 4, 7; M-2.

Actions:

A.1: Acquire private lands near the Trinity River if offered by the landowner through exchange for other public lands within Trinity County.

Trinity River Recreation Activity Management Plan

U.S. DEPARTMENT OF THE INTERIOR • BUREAU OF LAND MANAGEMENT



LIMITED AREA - ONLY ROUTES OPEN TO MOTOR VEHICLE USE SHOWN ON PUBLIC LANDS (BLM) WITHIN PLAN AREA.

MAP #4

0 1/2 1 2 3 MILES

Discussion:

First priority should be given to exchange proposals within ¼ mile of the river where public recreational use is creating trespass problems for the landowner. Second priority should be given to lands within the river viewshed which separate public land parcels. Acquisition potentials should also be considered for lands suitable for creating additional river access and camping use opportunities.

Support Needs:

Establish an exchange lands inventory outside the river corridor.

B. Special Designation or Withdrawals

Issues addressed: S-1, 3, 3, 5, 6; P-2, 4, 5, 6, 7; M-2, 3, 5.

Actions:

B.1: Designate the plan area for off-road vehicle use as limited to the designated roads and trails as shown on map 4.

Discussion:

Indiscriminate vehicle use on fragile soils (primarily decomposing granites) has been a major cause of sedimentation in the river bed. Off-road vehicle use in wetland areas along the river may also contribute to mechanical destruction of spawning beds. This action should help reduce both of these adverse impacts associated with unrestricted off-road vehicle use.

Support Needs:

Formal off-road vehicle use designation.

B.2: Place protective withdrawals on Steelbridge Campground and Bucktail Hole Fishing Access.

Discussion:

This action is carried forward from the Redding Land Use Plan.

B.3: Withdraw selected acquired lands along the Trinity River from mineral entry and designate them as recreational mining areas.

Discussion:

Newly acquired private lands may be suitable for providing recreational mining opportunities. By establishing such areas specifically for casual recreational mining, conflicts between mining claimants and visitors interested in recreational mining can be reduced.

Support Needs:

Solicitor's opinion concerning recreational mining. Land acquisitions followed immediately by protective withdrawals.

B.4: Close selected public lands outside of designated campgrounds to camping.

Discussion:

A wide array of health hazards, user conflicts, etc. have been caused by camping on vacant public lands along the river. Camping opportunities are insufficient in the existing three developed campgrounds; therefore, overflow or preferential use occurs on lands which lack sufficient management control or facilities. Problems generated by this use can be controlled if additional primitive camp areas are established and unregulated camping along the river is reduced.

Support Needs:

Additional primitive campground areas and formal closure of the selected public lands to camping. See map showing areas to be closed to camping, Map 5.

B.5: Determine eligibility of the Limekiln Gulch cabin site for the National Register of Historic Places.

Discussion:

The Redding Land Use Plan specifies actions to be taken if this historic site is determined to be eligible for the National Register.

Support Needs:

Coordination with Trinity County Historical Society and State Historic Preservation Officer.

B.6: Designate disposal sites along the Trinity River for deposition of sediments removed form the river bottom through river restoration projects.

Discussion:

Refer to Action G.2.

C. Visitor Services and Resource Protection

Issues addressed: S-1, 2, 3, 4, 5, 6: P-1, 3, 6, 7, 9; M-1, 3, 4, 5, 6, 7.

C.1: Establish regular uniformed visitor service patrols whose primary function will be the direct field management of visitors.

Discussion:

Visitor service patrols will be provided to enforce rules and regulations, resolve conflicts between competing user groups, provide visitors with information, encourage safe use of the public lands and directly intercede to mitigate hazardous situations, collect data concerning visitor use, maintenance needs, etc., collect permit fees, provide emergency services and assistance to the public, provide light maintenance of undeveloped areas, provide liaison with the Trinity County Sheriff's Department and provide compliance for Special Recreation Use Permits issued within the river area.

Patrol coverage of the river area will be provided daily from the period beginning May 1 and ending November 1 each year, and twice weekly over the remainder of the year. Patrol coverage should ensure that each parcel of public land along the river is visited daily during the heavy use season.

Visitor service patrols will also identify river area enhancement projects for volunteer groups or individuals, and will provide supervision of volunteers being utilized in the river area, either in project groups or as individuals providing facility or area host services.

Patrols will also coordinate visitor management with the Big Bar Ranger District, Forest Service, for forest lands adjoining the river area.

Support Needs:

Training, equipment, and funding for visitor services personnel.

D. Information and Interpretation

Issues addressed: S-1, 3, 3, 5, 6: P-1, 2, 3, 4, 6, 7, 9, 10; M-3, 7.

Actions:

D.1: Develop a Trinity River information brochure which displays recreational facilities, rules and regulations, public land boundaries, emergency services information, advice on proper use of public lands, transportation and access routes, hazards and safety information, etc.

Trinity River Recreation Activity Management Plan

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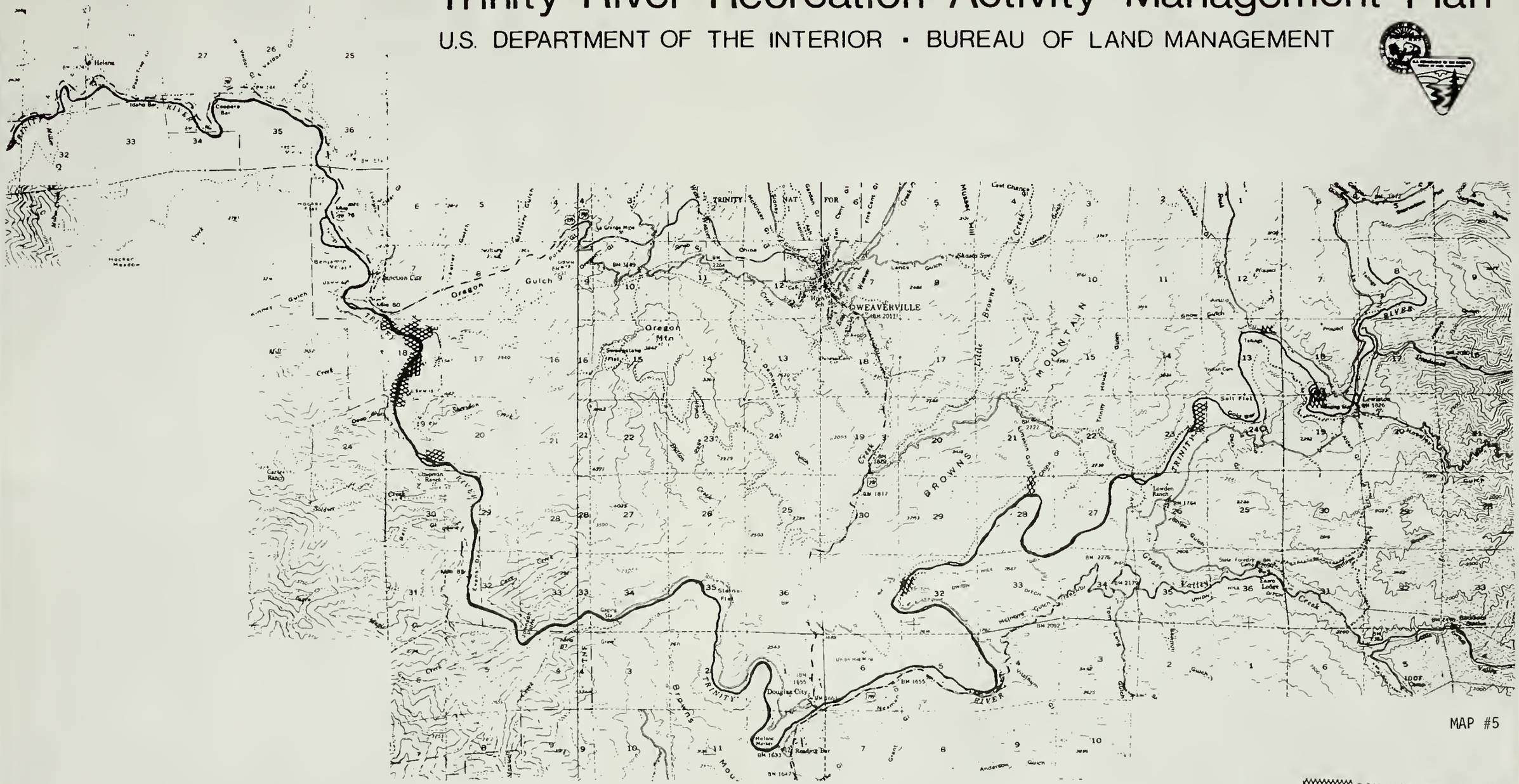

MAP #5

DAY USE ONLY AREAS

0 1/2 1 2 3 MILES

Discussion:

The majority of trespass problems, resource damage and user conflicts occur because visitors and area residents are unaware of rules, use opportunities, and appropriate behavior. Direct contact by rangers with every visitor is impossible; therefore, a brochure could provide a mechanism by which most of the information the visitor needs could be cheaply disseminated, by mail or by providing brochures at major access points.

Informed visitors will reduce the need for compliance/enforcement by visitor service personnel by applying peer pressure on improperly behaving visitors. Also, contacts for general information will be reduced because many visitors will have direct access to the information being sought by other visitors.

Support Needs:

Design, printing and distribution mechanisms for the brochure.

D.2: Develop a comprehensive sign system for the area, including boundary signs, facility entrance signs, general and specialized information signs within developed areas, trails signs and boating (river trail) signs.

Discussion:

Most of the public land boundaries in the river area are unmarked or not marked sufficiently to allow the general visiting public to know with reasonable certainty when they are on or off the public lands. All public land boundaries within one-fourth mile of the river should be clearly delineated with easily recognizable but unobtrusive signs, visible from both land and water approaches.

Additionally, all special use areas or areas having restrictions on certain uses should be clearly marked, both in developed areas and on undeveloped areas. Locations and type of facilities should also be indicated by signing of approaches on roads, trails and along the river. Other agencies, such as Trinity County, Department of Fish and Game, etc., should be encouraged to utilize signing which is compatible with standard BLM signs.

Support Needs:

A comprehensive sign plan/inventory and replacement catalogue should be developed, showing specific locations, method of mounting and message for every BLM sign in the river area.

D.3: Message boards (kiosks) will be placed at key developments, including campgrounds and developed access points.

Discussion:

A standardized message board with a visitor register, a map, and areas for posting rules, holding brochures, posting messages and depositing information for visitor services personnel (rangers) should be located at each facility. These boards or kiosks will provide a key orientation and contact point for visitors and will also provide the visitor with a reliable mechanism for contacting rangers about problems occurring in the area. Boards should be placed at Rush Creek, Bucktail Hole, Steelbridge, Douglas City, Junction City, and Helena. Where appropriate, the boards can be modified to handle fee deposits also.

Support Needs:

Design, construction, and installation of message boards.

D.4: Interpretive signs explaining the historical significance of the Limekiln Gulch Trading Post, the Bagdad townsite and mine workings near Lowden Ranch will be installed on site.

Discussion:

The important historic sites along the river should be preserved, however, without public appreciation of the value of these properties they will continue to be abused. With interpretive signing in place, the visiting public will have opportunities to increase their knowledge of the area's past and at the same time will be discouraged from damaging these sites.

Support Needs:

Begin design and historical interpretive message development.

E. Special Area/Use Permits

Issues addressed: S-1, 3, 5, 6; P-1, 2, 3, 4, 9: M-1, 2, 6.

Actions:

E.1: Require Special Recreation Use Permits for all recreational uses of the public lands along the Trinity River which require that the users involved control the affected public lands to the exclusion of other visitors.

Discussion:

Periodically, public land facilities or vacant areas near the river are needed for such activities as church picnics, service organization parties, scout campouts, etc. These types of activities usually displace other visitors and require special controls which can only be provided through the permit system. Such uses need to be evaluated on a case-by-case basis because they may be acceptable under one set of conditions but unacceptable under other circumstances.

Support Needs:

Establish and publish a fee schedule for special uses.

F. Cooperative Agreements, Memoranda of Understanding and Volunteers

Issues addressed: S-1, 3, 3, 5; P-1, 3, 8, 7, 9, 10; M-1, 3, 5, 6, 7.

Actions:

F.1: Develop a cooperative agreement or memo of understanding with the Big Bar Ranger District, Shasta/Trinity National Forests for cooperative management of mutual concerns along the Trinity River.

Discussion:

The BLM and FS conduct similar recreation management activities on the Trinity River and some recreational uses, such as commercial rafting, utilize both BLM and FS administered lands and require separate permits from both agencies under the existing arrangement. By combining appropriate management actions, the public may be better served since duplication of services or controls could be substantially reduced, and the combined resources of both agencies could be utilized to enhance many types of recreational experience opportunities.

Support Needs:

Memorandum of understanding or cooperative agreement.

F.2. Maintain a cooperative agreement with the Trinity County Sheriff's Department to provide law enforcement patrols for public land facilities along the Trinity River.

Discussion:

A cooperative agreement has been in effect for two years with the Trinity County Sheriff's Department to provide nightly patrols through the Douglas City, Junction City and Steelbridge campgrounds. This regular patrol activity has substantially reduced problems with vandalism, disorderly conduct and other inappropriate behavior in these facilities. This arrangement should be preserved and expanded, when possible, to provide broader coverage for the public lands near the river.

Support Needs:

Additional funding for cooperative L.E. agreements.

F.3: Develop a comprehensive volunteer program which will provide a labor pool for assisting the Bureau in all applicable aspects of land and visitor management in the river corridor.

Discussion:

Properly supervised volunteers, either individually or in groups, can provide substantial support to many phases of the recreation management program. Potential volunteer actions include campground hosts, river area patrols, data collection, hazard mitigation projects, interpretive guides, site rehabilitation and trail maintenance (adopt-a-trail). Because volunteers are motivated largely through other than monetary recognition for work performed and are likely to be highly supportive of the Bureau's land management goals, volunteers on the river should be part of a parent volunteer organization which is readily identified by area residents and visitors alike. Basic direction for a volunteer organization would be provided by BLM, however, the organization should have its own charter, officers, leadership structure, fund raising authority, etc. Having such an organization in place could relieve the Bureau of considerable fiscal uncertainty over the life of this plan.

Support Needs:

Creation of a volunteer director function in Redding Area.

F.4: Wherever possible, utilize support from other agencies for resource and visitor management activities in the river area.

Discussion:

Many other agencies have programs which could be utilized to support BLM goals in the river area. For example, the California Department of Forestry has a volunteer fire warden program; the California Department of Fish and Game has a volunteer warden program; the Crystal Creek Conservation Camp can provide crews for certain types of labor-intensive projects; and other agencies or service organizations are often willing to provide support for certain types of projects which BLM may wish to pursue in the river area. Implementation actions for this plan should, wherever feasible, fully utilize the enormous potential for support from non-federal sources which is generally accessible to the Bureau.

G. Resource Manipulation and Rehabilitation

Issues addressed: S-3, P-5, 10; M-3,4,6.

Actions:

G.1: Limit use of chemical pesticides to those pesticides which are both Environmental Protection Agency approved and are allowed under State law and local ordinances.

Discussion:

Many residents of the river area draw their domestic water directly from the Trinity River. In order to avoid contaminating this water supply it appears prudent to limit use of chemical treatments for control of undesirable flora and fauna on public land areas which drain directly into the river.

G.2: Where and when feasible utilize river sediments collected from anadromous fish habitat improvement projects to fill dredger tailings piles near the river.

Discussion:

Fish habitat improvement work requires disposal of large quantities of sand (decomposed granite). Several areas near the river are covered by extensive dredger tailings, consisting primarily of large cobble to boulder size rock with little or no soil or organic material. By covering some of these tailings areas with dredged sand, it should be possible to establish vegetation and wildlife habitat, and also create fairly level, usable land areas for future recreational facility or undeveloped area uses.

Support Needs:

Coordination with the Trinity River Task Force and California Department of Fish and Game.

Graphic:

See Map 6.

G.3: Where rights-of-way are granted for structures on the public lands within the immediate proximity of the river, natural materials, vegetation, and flat chocolate brown paint (where applicable) will be utilized to camouflage those structures.

Trinity River Recreation Activity Management Plan

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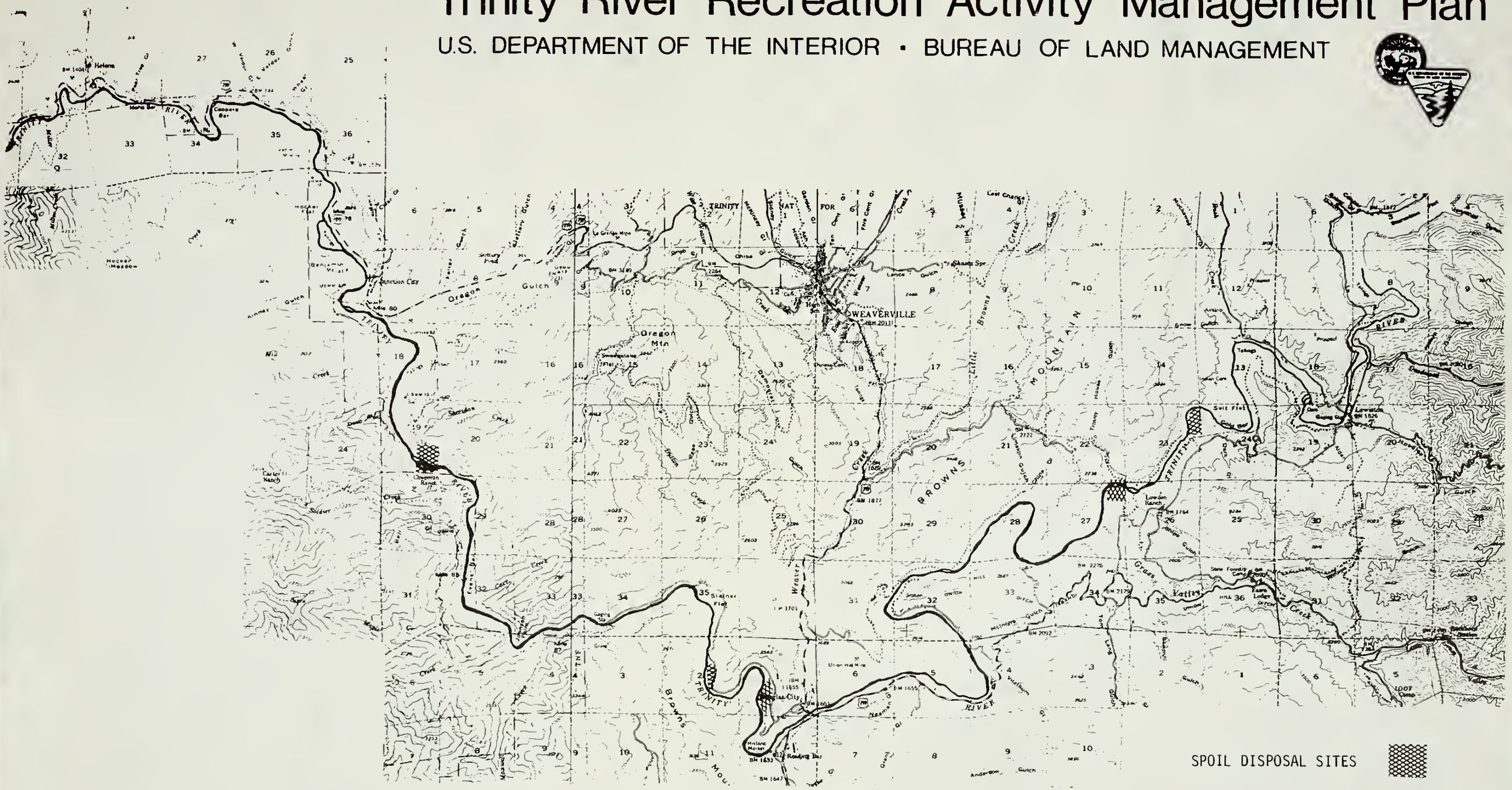

Discussion:

Numerous structures such as pipelines and pumphouses have been or may be authorized on public lands within close proximity of the Trinity River. In most cases, requiring systems changes which would eliminate existing structures would be prohibitively costly to the individuals involved. These structures, in most cases, can be modified to blend inconspicuously with the natural river scene, and, if not hideable by burying or other screening, could be painted similar to structures located on recreation developments on public lands. By painting the structures the standard color (chocolate brown), the appearance of private land ownership where none is present would be largely eliminated, though privately owned improvements might be located on the public lands.

Support Needs:

Inclusion of this requirement for all applicable use authorizations within the river corridor.

G.4: Discourage inappropriate uses of undeveloped public lands within the river corridor by utilizing plantings of thorny vegetation.

Discussion:

Many undeveloped areas near the river receive occasional deleterious use, made possible by their isolation from regular management attention. For example, there are areas used habitually for human waste deposition which would no longer be used if filled with thorny plants, such as blackberries. This technique could be especially successful in dense riparian areas, such as upstream from Bucktail Hole, where careless camping has caused both social and health problems.

H. Special Rules

Issues addressed: S-2, 3, 6; M-2, 5.

Actions:

H.1: Define recreational mining.

Discussion:

Action B.3 discusses establishing recreational mining areas. Before this can be accomplished, the activity will have to be defined clearly.

H.2: Develop rules for camping in undeveloped (primitive) camp areas.

Discussion:

Restricting the areas in which primitive camping is allowed, as discussed in action B.4, will not, by itself, eliminate all the health and safety problems which have been generated by this activity. Rules for undeveloped area camping should deal with fire hazards, litter and human waste disposal, fuelwood collecting, and site modifications at a minimum. Other uses such as shooting, use of motorized equipment, etc. may also need to be addressed to assist visitors in understanding appropriate primitive camping behavior.

I. Site or Facility Development (Map 7, page 49)

Issues addressed: S-1, 2, 3, 4, 5; P-1, 2, 3, 5, 6, 7; M-1, 3, 5, 6, 7.

Actions:

I.1: Develop a boating and fishing access at Cemetery Hole.

Discussion:

BLM has no legal access to the site. Some fishing trails exist; however, dense riparian vegetation has most of river shoreline cut off for both boaters and fishermen. Facilities at this site should include an access road, parking area with toilet, boat ramp area (primitive) and riverside trail with fishing openings to the river. The boat ramp facility development will be evaluated with regard to the existing launch area below the old Lewiston Bridge operated by California Department of Fish and Game.

Support Needs:

Project plan.

I.2: Re-align access road for the Rush Creek site. Gravel parking area.

Discussion:

The existing river access at Rush Creek has a very dangerous hairpin entry road. This road should be aligned in the opposite direction from the existing situation to eliminate the hairpin turn. The vehicle parking area becomes virtually useless during the winter months due to deep mud. This parking area and the access road should be gravelled.

I.3: Improve riverside trails at Bucktail Hole and expand parking.

Discussion:

The fishing access trails at Bucktail Hole are overgrown, steep, and loose. These trails should be improved to allow reasonably safe walking and better fishing access to the river. Vehicle parking should be expanded to provide space for at least 10 vehicles at one time. The existing arrangement forces fishermen to park along Brown's Mountain Road.

I.4: Develop a day use site at Bucktail Hole.

Discussion:

There presently is a toilet at Bucktail Hole; however, there is no access to it from the river. A floater's pull-out could be developed upstream from the bridge. An additional toilet (vault type) would be needed near this pull-out. Also, develop four picnic sites.

Support Need:

Project plan.

I.5: Stabilize the Limekiln Gulch cabin and barn, and develop a pit stop.

Discussion:

The Limekiln Gulch site is a popular stopping point for canoeists; however, this historic building and associated barn are structurally unsafe and deteriorating at the present time. Interpretive opportunities are excellent for this site. A safe pull-out and toilet should also be developed. The toilet should be of a near zero maintenance design, since servicing would be difficult due to the lack of vehicle access into this site. The extent of recreation development and use will be dependent upon the amount of protection needed to maintain the historical integrity of the site.

Support Need:

Project plan, interpretive plan, cultural resource management plan.

I.6: Study feasibility of a riverside trail between Steelbridge and Limekiln Gulch, with a river crossing structure.

Discussion:

Remnants of an old road and a short trail presently follow the river upstream from Steelbridge toward Limekiln Gulch. There is a demand for such a trail for hiking, nature study, and fishing.

This 2½ mile river reach is the only well-suited area for a stream-side trail as it is almost entirely in public ownership, and is virtually pristine (semi-primitive ROS class). A footbridge would be needed to provide a river crossing.

Support Needs:

Project (trail) plan, interpretive plan, easement acquisition from S. P. Land Company.

I.7: Install a toilet (vault or portable) at Steelbridge Hole.

Discussion:

The Steelbridge Hole site is a very popular fishing and tubing area. The toilet facilities at Steelbridge Campground are sufficiently distant that the visitors to Steelbridge Hole rarely use them. This has generated a human waste health hazard.

Support Need:

Project plan.

I.8: Redesign the Steelbridge Campground for redevelopment into a primitive fee campground with a potable water system.

Discussion:

The existing Steelbridge Campground lacks well-defined campsites. The lack of site definition in this facility has resulted in overcrowding, which in turn has caused soil compaction and erosion throughout the campground and upriver beyond the original facility boundaries. By redesigning and redeveloping this facility the ongoing resource damage can be controlled and, at the same time, a higher quality camping experience can be provided for the public. With the addition of a low maintenance potable water system, a minimal campsite use fee could be charged to help recover the costs of mitigating the existing resource damage. This campground would then provide approximately 12 good quality campsites.

Support Needs:

Project plan, water system development.

I.9: Extend the hiking trail from Douglas City Campground down the right side of the Trinity River to Steiner Flat Primitive Camping Area.

Discussion:

The existing hiking trail dead-ends at an unauthorized barbed wire fence. If extended to Steiner Flat, the trail would provide over 2½ additional miles of direct river access.

Support Need:

Trail plan.

I.10: Develop a boat-in primitive camp area on the left bank of the river approximately one-fourth mile south (upstream) of the community of Steiner Flat.

Discussion:

This primitive camp area would provide a primitive camping opportunity for float boating parties without occupying the existing drive-in campsites. The location is ideally suited for boat-in camping as there is no vehicle access and it is well removed from populated areas along the river. This camping area would have no convenience facilities. Outfitters or groups would be required to carry their own wastes for later disposal. A launch/recovery modification to the riverbank and a fire-safe control area on reasonably level ground would be the only improvements.

Support Need:

Project plan.

I.11: Improve the Steiner Flat Primitive Camping Areas for access, fire hazard reduction and human waste control.

Discussion:

There are two areas downstream from the Douglas City Campground which are ideally suited to primitive camping. They are located on dredger tailing disposal areas, and require no more than vault toilets and limited access road improvement to function adequately. No tables, garbage cans, or fire grills are necessary for this type of camping area. Visitors would be required to pack out their own refuse and would be encouraged to clean up their campsites. These areas should be modified or cleared to provide up to thirty well-spaced campsites.

Support Needs:

Removal of existing occupancy trespass structures, barricades, signs, etc. Project plan.

I.12: Install and maintain the informational, regulatory, and interpretive signs called for in Action D-2.

Support Need:

Sign plan.

I.13: Develop a boat-in "pit stop" near Sheridan Creek.

Discussion:

Between the Douglas City Campground and Junction City Campground is a river reach of over fourteen miles with no toilet facilities. By providing a toilet and rest area in the vicinity of Sheridan Creek, a midway stop would be available to the floating public. Some rehabilitation would be required to make the dredger tailings in this location usable for these purposes.

Support Needs:

Project plan.

I.14: Improve the access and parking area at Junction City Beach.

Discussion:

The Junction City Beach is a very popular swimming, sunbathing, and boat camping area immediately across U.S. 299 from the Junction City Campground. Only part of this site is public land, and most use involves public trespass on the key private land parcel. Ownership should be consolidated and the access and parking improved.

Support Needs:

Acquisition, project plan.

I.15: Develop a river access at Helena (north Fork confluence) with boat launch and recovery facilities, parking area, and primitive campground.

Discussion:

The area at Helena is ideally suited for ending float trips on the BLM-managed portion of the Trinity River and beginning float trips for the Forest Service-managed reach (Big Bar RD). The FS currently asks outfitters to launch trips at this lcoation. Dense riparian vegetation severely limits access to the river and there are no hardened parking areas or toilet facilities.

This area should be developed to better accommodate the existing uses and anticipated future use increases. Cooperative management of this area with the Forest Service would be appropriate.

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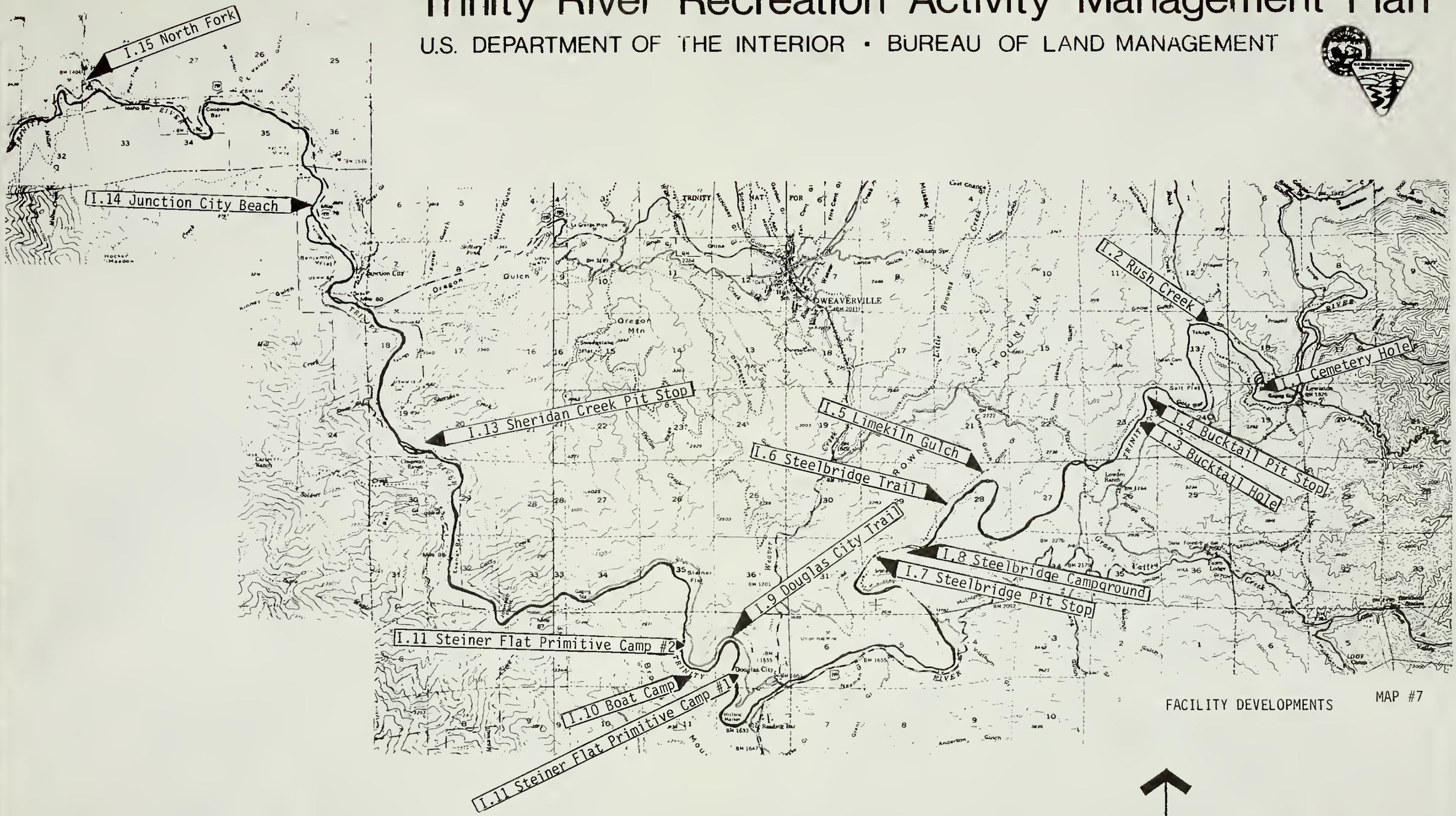

FACILITY DEVELOPMENTS MAP #7

Support Needs:

Project plan, cooperative agreement (BLM - USFS).

J. Restrictions on Other Programs

Issues addressed: P-9, 10; M-4.

Actions:

J.1: Require water intake structures authorized under rights-of-way or other authorization on public lands to have smooth-sided intake shields.

K. Maintenance

Maintenance includes the normal operational activities needed to maintain the facilities along the river to BLM standards. This includes facility repair, upkeep and replacement, solid waste disposal, litter cleanup and removal, sign and road repair, control of vegetation and landscape maintenance, water quality testing and water systems upkeep.

L. Administration

Administration of the Trinity River Recreation Area will require an increase in workmonth and construction/maintenance funding over the projected life of this plan. Changes in management direction for this area will require a strong visitor services commitment because initially, traditional use patterns on public lands will have to be modified. Direct contact with the visiting public is the only viable mechanism for affecting changes in user habits. As new facilities are developed, visitor use will increase substantially, requiring continual attention to use supervision, informational services, visitor and resource protection and law enforcement. Additionally, maintenance requirements will increase as additional facilities are put into operation. Minimum staffing and equipment needs are listed below:

1. Staffing:

a. Visitor Services Positions:

Outdoor Recreation Planner GS-023-11 (Existing Position)

This position would be the lead resource area level Outdoor Recreation Planner position. This would be a permanent/full time position with overall responsibility for the area's recreation program. Part of that position's duties would include monitoring and revision of this plan, project planning

for the facility developments identified in this plan, negotiation of cooperative agreements, memoranda of understanding, etc., organization of volunteer services, and to provide training and supervision for visitor services personnel working within the Trinity River Recreation Area. This position would also provide field patrols in the area during heavy use periods or periods when other visitor services personnel are unavailable. This position would report to the Resource's Branch Chief in the area office organization.

Park Technician GS-026-6/7 (New Position)

This position would be permanent full-time and would have the primary field level visitor services patrol responsibility for the river area. This position would provide regular visitor and resources protection patrols for the area, develop and maintain the data base of river use, collect fees, ensure commercial permit compliance and identify maintenance and use adjustment needs. This position would be under the direct supervision of the Area Outdoor Recreation Planner.

Park Technician GS-026-5 (Existing Seasonal Position)

This position would provide additional visitor services coverage during the approximately 200-day heavy use season enhancing services provided by the position identified in position above. This position could be either a temporary or WAE type of appointment.

b. Maintenance Positions:

The additional workload generated by this plan will require two additional maintenance positions. Both would be six-month WAE or temporary position. These six-month positions would cover the heavy use periods (May-October).

2. Special Equipment Needs:

a. Visitor Services:

Each visitor service position will need a standard size pickup truck equipped with radio pack and storage bed-box for additional special equipment to support first aid, search and rescue, light maintenance and information distribution activities. These vehicles should also be equipped with a PA system and winch.

A canoe, of ABS royatex material construction, should also be pre-positioned in the river area for use in patrolling boat-in only areas.

b. Maintenance:

Each additional position will require a standard size pickup with radio set up. No additional special equipment needs are anticipated at this time. As the plan is fully implemented and use increases, a commercial-size trash compactor and/or large capacity dump truck will be needed.

Note: All equipment items except PA systems, winches, and trash compactor are on hand at the area office.

Part IV. Implementation Phasing and Costs

A. Conceptual Site Plans - Major New Developments

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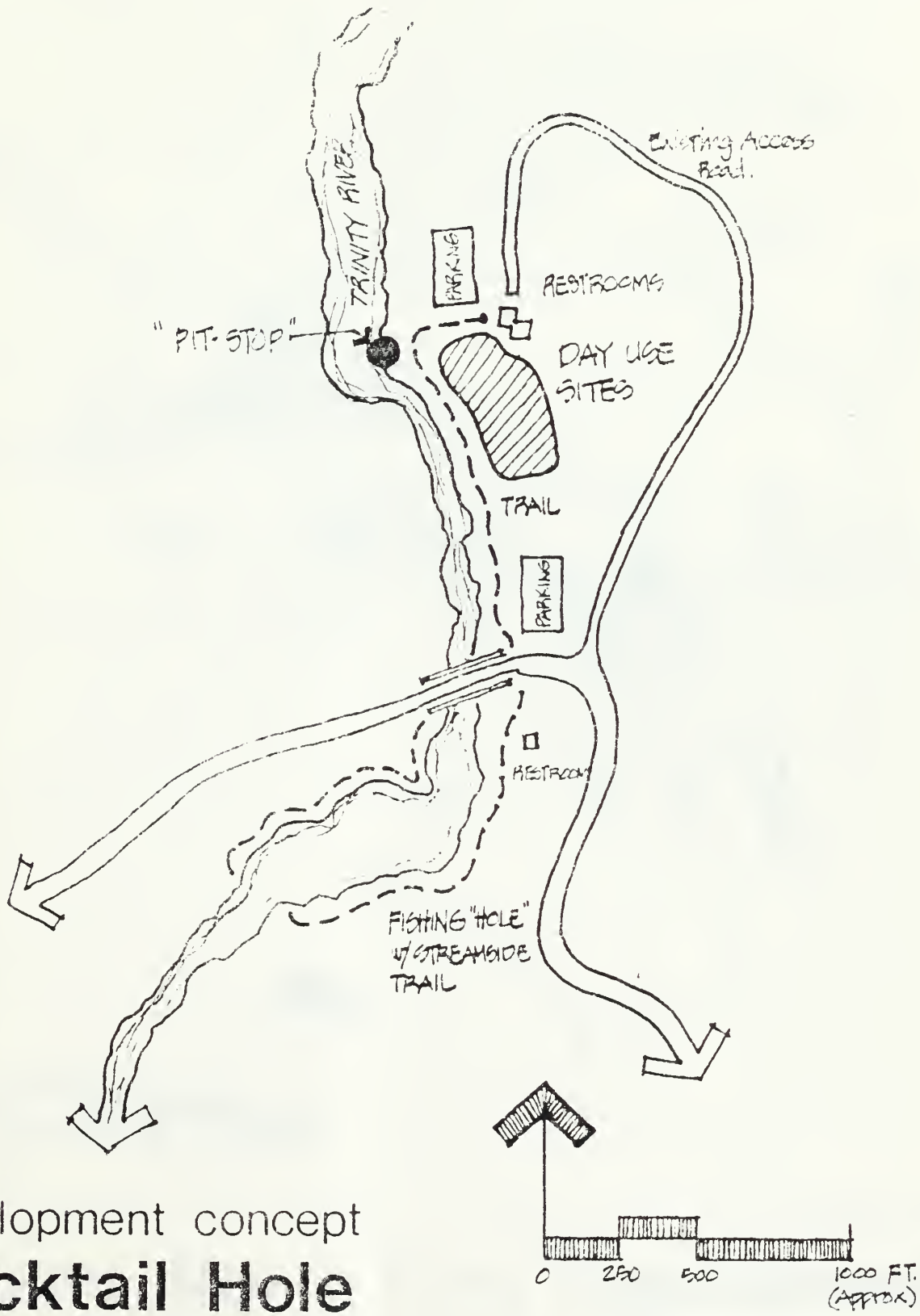
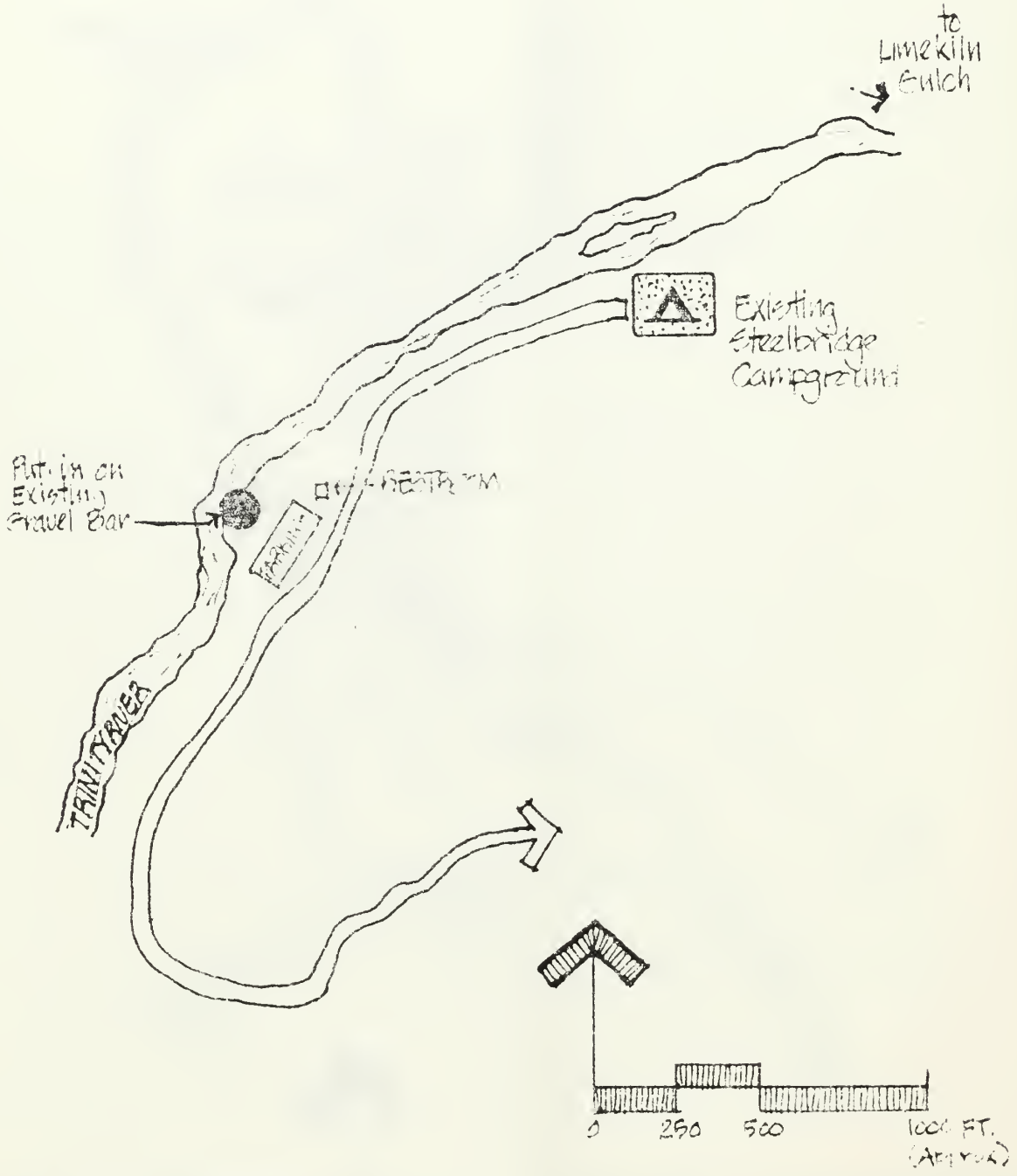


development concept

Bucktail Hole

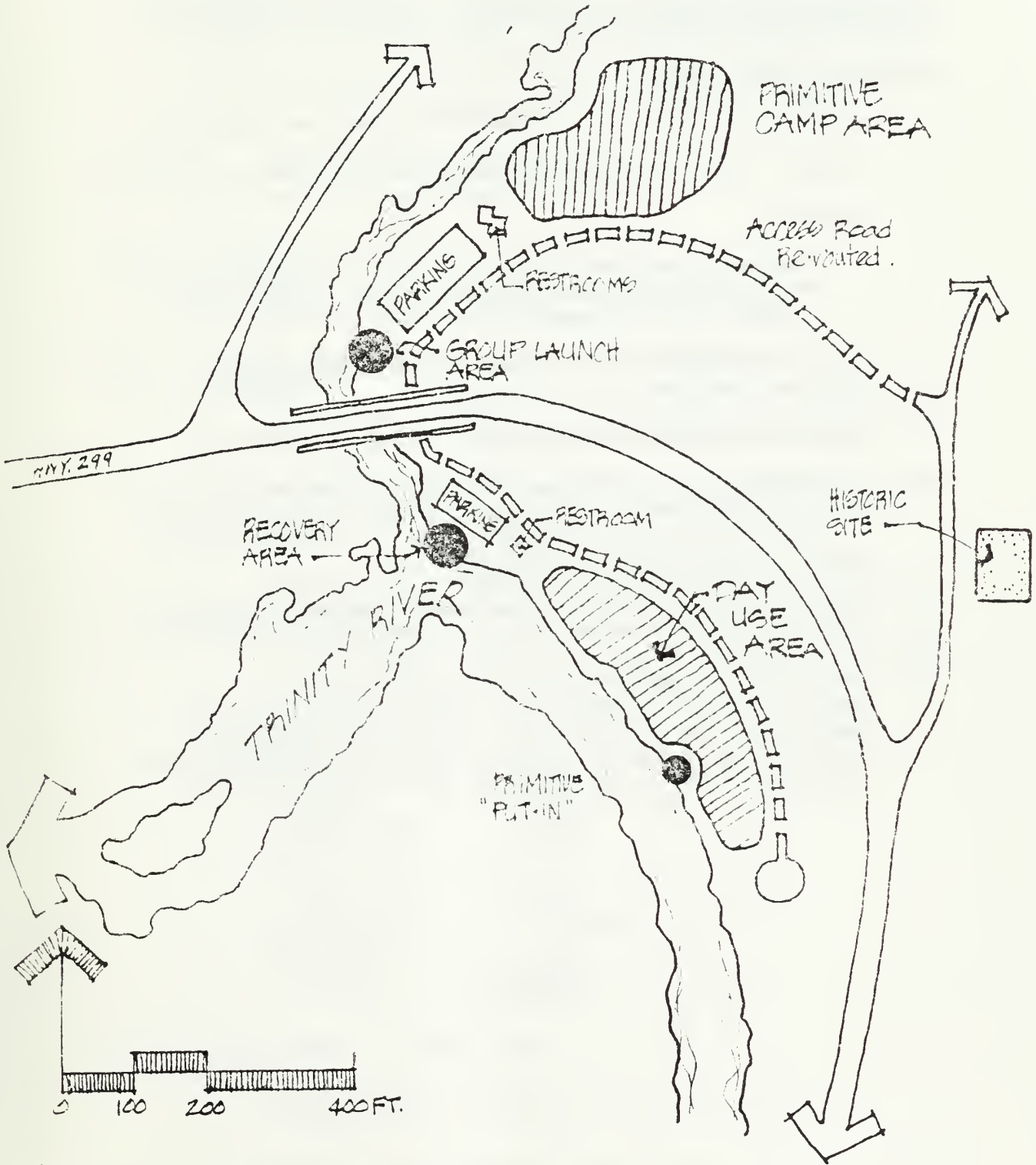
Trinity River Recreation Activity Management Plan



development concept

Steelbridge

Trinity River Recreation Activity Management Plan



development concept

Helena · North Fork Confluence

B. Cost Estimates For Planning Purpose Only - Project Planning Will Determine Actual Costs

Generalized Cost Summary

1. Access Road - Grading and 4" Gravel/Rock Surface $150/station

2. Parking - Grading and Gravel/Rock Surface $3.00/SY or $125/car

3. Restrooms

a.	Permanent concrete structure w/vault	$8000.00/unit
b.	Prefab., portable, or permanent w/vault	$3500.00/unit
c.	Compost unit with prefab. structure	$5000.00/unit

4. Trail construction - 3'-4' tread includes clearing and drainage structure $2000.00/mile

   Reconstruction with minimal surface work $1000.00/mile

5. Day use/picnic site - 500 square feet; clearing and grubbing; site leveling; table, grill, and trash can; and parking spur $2000.00/site
   (Does not include water development)

6. Primitive campsite - 600 square feet; clearing and grubbing; fire ring with "fire-safe" area and parking spur $750/site

7. "Put-in" boat launch/recovery facility
   Group put in with 50 foot river frontage includes rip-rap, sand launch area and tie posts $2500.00
   Primitive put-in for pit stops 20 foot river frontage minimal rip-rap for launch area protection and tie posts $1000.00

8. Bridges - Footbridges general cost including planking, rails, and foundation $50.00/SF

9. Signage - Currently BLM signs are not directly charged to the district or project costs. The major costs attributed at district level are installation, labor, and materials. This sign costs may, in the coming FY, be charged to the districts or state office. For this plan the costs are limited to installation and special needs.

   a. Primitive developments $500.00
   b. Developed use areas $1500.00

10. Potable Water System

   a. Gravity feed or hand pump system $ 2500.00
   b. Pressure system with storage $12000.00

I-1: Cemetery Hole: Boating and Fishing Access

A. Access Road - Either gain legal access on existing road or develop new direct access to County road.

B. Parking - Gravel/rock surfaced parking area for 12 cars.

C. Toilet - Install 2 prefabricated vault toilets.

D. "Put-in" - Develop 50 foot river frontage for "put-in" by boaters/floaters.

E. Trail - Clear riverside trail with openings for fishing access (½ mile).

Development Costs ($)

1.	Survey	$ 600
2.	Easement	8400
3.	Project Plan	3000
4.	Design	4000
5.	Access Road & Parking	6000
6.	Fishing Trail	volunteers
7.	Boat Ramp	350
8.	Toilets	7000
	Total	$ 29350

I-2: Rush Creek: Fishing Access

A. Access Road - Realign access for safe junction with County road.

B. Parking - Gravel/rock surfaced parking area for 6 vehicles.

Development Costs ($)

1.	Survey	- $	350
2.	Project Plan	-	850
3.	Design	-	400
4.	Construction	-	7000
	Total	$	8600

I-3: Bucktail Hole: Fishing Access

A. Parking - Gravel/rock surfaced parking are for 10 cars, adjacent to County road.

B. Trail - Streamside trail with openings for fishing access on both banks surrounding "hole." Trail also continues upstream to "pit-stop" for boaters.

Development Costs ($)

1.	Gravel Parking Area	- $	2500
2.	Trail	-	volunteer labor

I-4: Bucktail Hole: "Pit-Stop" For Boaters/Day Use Area.

A. Parking - Parking area for 12 cars with gravel/rock surface on existing road.

B. "Put-in" - Primitive "put-in" for boaters with 20 foot river frontage.

C. Day Use Sites - Develop 4 day sites for picnicking.

D. Toilet - Provide 2 prefabricated vault units.

Development Costs ($)

1.	Survey	- $	750
2.	Project Plan	-	3000
3.	Design	-	600
4.	Roads and Parking Area	-	1200
5.	Toilets	-	7000
6.	Picnic Sites	-	10000
	Total	$	22550

I-5: Limekiln Gulch: Boaters "Pit-Stop" and Stabilization of Historic Structures.

A. "Pit Stop" - Develop primitive "pit stop"/landing area along river (20 foot frontage). Clear access and develop trail to historic structures.

B. Toilet - Install composting/low maintenance toilet (1).

C. Provide interpretive signage (CRM Plan).

Development Costs ($)

1.	Survey	- $	400
2.	Project Plan	-	2500
3.	Design	-	600
4.	Landing	-	450
5.	Toilets	-	3500
6.	Signs	-	900
	Total	$	8350

I-6: Steelbridge/Limekiln Gulch Trail

A. Study feasibility of trail.

B. Trail - Develop remnant of old trail/road and any new trail necessary to Limekiln Gulch (2½ miles).

Development Costs ($)

1.	Trail Feasibility Study	- $	1800
2.	Survey	-	1500
3.	Easement	-	4200
4.	Trail Plan	-	3000
5.	Construction	-	4000
	Total	$	14500

I-7: Steelbridge Hole: Fishing and Boating Access

A. Parking - Provide identified parking area for 15 cars. Gravel/rock surfaced.

B. Toilet - Install 1 prefabricated vault toilet.

Development Costs ($)

1.	Project Planning	-$	1500
2.	Construction	-	4000
	Total	$	5500

I-8: Steelbridge Campground: Redevelopment

A. Circulation Road - Gravel surface of circulation road and parking spurs.
B. Water System - Install minimal potable water system.
C. Develop 12 fully accommodated campsites.

Development Costs ($)

1.	Survey	- $	250
2.	Project Plan	-	1800
3.	Design	-	500
4.	Water System	-	2000
5.	Road & Parking	-	3500
6.	Campsites	-	8500
	Total	$	16550

I-9: Douglas City Camp/Steiner Flat Trail

A. Trail - Develop 2½ miles of trail for river access and linkage of camp areas.

Development Costs ($)

1.	Survey	- $	1500
2.	Project Planning	-	1500
3.	Design	-	900
4.	Construction	-	8000
	Total	$	11900

I-10: Steiner Flat: Primitive Boat-In Camp

A. "Put-In" - Develop primitive boat-in area along river frontage as necessary.

B. Camp Areas - Clear and grub 10 sites for camp areas with no facilities.

C. Fire-Ring - Clear and establish "fire-safe" area and install large group fire ring.

Development Costs ($)

1.	Survey	- $	400
2.	Project Planning	-	1500
3.	Design	-	500
4.	Construction	-	800
		$	3200

I-11: Steinter Flat: Primitive Camps (2)

A. Access - Improve access roads and internal road network.

B. Toilets - Install 3 prefabricated vault toilets (2 at larger site and 1 at other site).

C. Campsites - Clear and grub, level, and provide fire-safe cooking area with fire ring for 30 total camp sites (20 at larger site and 10 at the other site).

D. Boat "Put-Ins" - Provide 1 primitive "put-in" at each site.

Development Costs ($)

		Site 1	Site 2
1.	Survey	$ 400	$ 500
2.	Project Planning	3000	
3.	Design	1000	1500
4.	Roads	3500	6500
5.	Toilets	3500	7000
6.	Campsites	2200	3800
	Totals	$13600	$ 19300
	Grand Total	$ 32,900	

I-12: Signage: Informational, Regulatory, and Interpretive.

A. Facility/Site Development related signs are included in cost estimates for each development.

B. Boundary signs and river/boating trail signs are to be installed within Trinity River Plan Area.

C. Special Regulatory signs places as necessary for use areas and at major access points.

Development Costs ($)

1.	Develop Sign Plan and Designs	$3000
2.	Installation	5000
	Total	$8000

I-13: Sheridan Creek: "Pit-Stop" for Boaters/Floaters and Primitive Camp.

A. Access - Develop ¼ mile access road and loop through developed portion of site.

B. Toilet - Install 1 prefabricated vault toilet.

C. "Put-In" - Establish and identify 10 primitive campsites, including tailing rehabilitation to accommodate use. Provide fire rings with fire-safe areas.

Development Costs ($)

1.	Project Planning	$3000
2.	Survey and Design	3000
3.	Toilet	3500
4.	Campsites	5000
	Total	$14500

I-14: Junction City Beach: Access and Parking

A. Access - Improve access road to parking area and identify along highway (acquisition of private land necessary).

B. Parking - Grade and identify parking area for 20 vehicles.

No facilities - use of Junction City Campground facilities encouraged to users.

Development Costs ($)

1.	Land Exchange	$8000
2.	Survey and Design	1500
3.	Access Improvement	4000
	Total	$13500

I-15: Helena/North Fork Confluence:

A. Access - Improve existing access and loop road - grading and gravel/rock surface (coordinate access needs with Cal Trans due to new construction of bridge).

B. Parking - Provide gravel/rock surfaced parking for 30 vehicles at "put-in."

C. Boat "Put-In(s)" - 3 "put-ins" planned at this site. Two major launch and recovery facilities to accommodate groups and individuals, and 1 primitive put-in for day use area.

D. Campsites - Provide primitive camp sites (10) to accommodate river users. Located adjacent to "put-in" area.

E. Day-Use Sites - Develop 6 day-use sites along river.

F. Toilets - Three permanent toilet structures (vault).

Development Costs ($)

1.	Survey	$ 1200
2.	Project Planning	3000
3.	Design	3500
4.	Road System & Parking	12000
5.	Toilets	10500
6.	Campsites	6000
7.	Day Use Sites	3000
8.	Boat Ramps	5500
		$44700

C. Implementation Phasing and Costs

Cost Estimate Summary and Phasing Schedule

Action	Year ($000) 1	2	3	4	5	6	7	8	9	10
Land Tenure Adjustment										
A.1 Land Exchanges										
Southern Pacific		10	10							
Goodyear		5								
Barraco			3							
Armacost			3							
Special Designations/Withdrawals										
B.1 Off-Road Vehicle Use Designations	5									
B.2 Withdraw Bucktail and Steelbridge	5									
B.3 Withdraw Acquired Lands for Designated Rec. Mining			5							
B.4 Close Undesignated Areas to Camping	1									
B.5 Eligibility Determination-Limekiln G.	3									
B.6 Sediment Disposal Site Designations				3						
Visitor Services and Resource Protection										
C.1 Visitor Service Patrols	27	33	33	33	33	33	33	33	33	
Information and Interpretation										
D.1 Trinity River Brochure		6			4			4		
D.2 Sign Plan	2	3	.5	.5	.5	.5	.5	.5	.5	.5
D.3 Message Boards (Kiosks)	1	1	1			1				1
D.4 Historic Signs		.5			1				.5	
Special Area/Use Permits										
E.1 Special Use Permits	2.5	3	2	1	1	1	1	1	1	1

Cost Estimate Summary and Phasing Schedule (cont.)

Action	Year ($000) 1	2	3	4	5	6	7	8	9	10
Coop. Agreements, MOUs, Volunteers										
F.1 Big Bar Ranger District, USFS		1		1				1		
F.2 Trinity Co. Sheriff	4	4	6	6	6	6	6	6	6	6
F.3 Volunteer Program	1	5	3	3	3	3	3	3	3	3
F.4 Other Agencies	1	1	1	1	1	1	1	1	1	1
Resource Manipulation and Rehabilitation										
G.1 Pesticide/Chemicals	2	2	1	1	1			1	1	1
G.2 Sediment Utilization			1	1		2	2	1	2	2
G.3 Right-of-Way Camouflage				1	2	1				
G.4 Thorny Plantings	1	1	1	2			1	1	2	
Special Rules/Regulations										
H.1 Define Recreational Mining		2								
H.2 Primitive Camping Rules Development		1								
Site or Facility Development										
I.1 Cemetery Hole										
Survey				.6						
Easement Acquisition				8.4						
Project Plan				3						
Design					4					
Access Road & Parking						6				
Fishing Trail										
Boat Ramp							.35			
Toilets								7		
I.2 Rush Creek										
Survey		.35								
Project Plan		.850								
Design		.4								
Construction			7							
I.3 Bucktail Hole-Fishing Access										
Parking Area	2.5									
Trail										
I.4 Bucktail Hole-Day Use Area										
Survey			.75							
Project Plan			3							
Design			.6							
Road and Parking				1.2						
Toilets					7					
Picnic Sites							10			

Cost Estimate Summary and Phasing Schedule (cont.)

	Action	Year ($000) 1	2	3	4	5	6	7	8	9	10
I.5	Limekiln Gulch										
	Survey	.4									
	Project Plan	2.5									
	Design	.6									
	Landing (boat)		.45								
	Toilet		3.5								
	Sign		.9								
I 6	Steelbridge/Limekiln Trail										
	Feasibility Study						1.8				
	Survey							1.5			
	Easement							4.2			
	Trail Plan							3			
	Construction								4		
I.7	Steelbridge Hole										
	Project Plan	1.5									
	Construction		4								
I.8	Steelbridge Campground										
	Survey					.25					
	Project Plan					1.8					
	Design					.5					
	Water System						2				
	Roads and Parking						3.5				
	Campsites						8.5				
I.9	Douglas City/Steiner Flat Trail										
	Survey							1.5			
	Project Plan							1.5			
	Design							.9			
	Construction								8		
I.10	Steiner Flat Boat Camp										
	Survey								.4		
	Project Plan								1.5		
	Design								.5		
	Construction									.8	
I.11	Steiner Flat Primitive Camps										
	Survey				.9						
	Project Plans				3						
	Designs				2.5						
	Roads					3.5	6.5				
	Toilets					3.5	7				
	Campsites						2.2	3.8			
I.12	Signage										
	Sign Plan		3								
	Installation			2	2	1					
I.13	Sheridan Creek										
	Project Plan							3			
	Survey and Design							3			
	Toilet								3.5		
	Campsites									5	

Cost Estimate Summary and Phasing Schedule (cont.)

Action	Year ($000) 1	2	3	4	5	6	7	8	9	10
I.14 Junction City Beach										
Exchange									8	
Survey and Design										1.5
Access Improvement										4
I.15 Helena/North Fork Confluence										
Survey		1.2								
Project Plan		3								
Design		3.5								
Roads & Parking Areas			12							
Toilets				10.5						
Campsites					6					
Day Use Area					3					
Boat Ramp					5.5					
Total for Developments	7.5	21.15	25.35	32.10	36.05	37.50	32.25	31.9	13.8	5.5
Total for Actions Other Than Maintenance & New Facility Development	55.5	78.5	70.5	53.5	52.5	48.5	48.5	52.5	50	48.5
Facility Development	7.5	21.15	25.35	32.1	36.05	37.5	32.75	31.9	13.8	5.5
Seasonal Maint. Workers - New	16.5	33	33	33	33	33	33	33	33	33
Annual Total Cost For Operation of Existing Facilities and Full Plan Implementation	79.5	132.65	128.85	118.6	121.55	119.0	114.25	117.4	96.8	87.0

D. Standard Implementation Procedures

Implementation of any of the array of the previously described actions on Bureau-administered lands, would be subject to existing laws, regulations, and BLM manual specifications and would be constrained to avoid or minimize impacts that could occur on other resources as follows:

1. A site specific environmental analysis (EA) will be conducted prior to actual construction or treatment phase of the facilities or projects proposed. During the early scoping stage of an EA, the project proposal will, whenever possible, be modified to avoid or minimize identified potential negative impacts. The EA will document the magnitude and type of impacts of proposed development or treatment to assist in making a decision on each proposal.

2. An analysis of potential effects on rare, threatened, endangered and BLM sensitive plants and animals will be required for each proposal. If needed, formal consultation with the U.S. Fish and Wildlife Service will be initiated. If any part of the proposal will have a negative impact on an officially listed rare, threatened, or endangered species, or its habitat, the project will either be modified to avoid this impact or abandoned. If any part of the proposal will have a negative impact on a BLM sensitive species, the project will be modified to avoid the impact where possible. Where it is not feasible to so modify the project, a determination will be made as to the effects on the species (or subspecies) as a whole. Informal consultation with the U.S. Fish and Wildlife Service will be initiated to aid in this determination. If it is determined that the project will not result in jeopardy to the species, the project will be approved; otherwise, it will be abandoned. The final determination will be made by the State Director.

3. The BLM will meet agency responsibilities under Section 106 of the National Historic Preservation Act (as amended) through the stipulations outlined in the Programmatic Memorandum of Agreement (PMOA) between the BLM and the Advisory Council of Historic Preservation dated January 14, 1980.

   A Class III cultural/historical inventory will be conducted prior to commencement of any development activities which involve land disturbance.

The Bureau of Land Management will design the development program to avoid adverse effects on properties included in, or eligible for, inclusion in the National Register of Historic Places, unless it is not prudent or feasible. Where avoidance is not prudent or feasible, the Bureau will consult with the State Historic Preservation Officer for purposes of developing a mutually acceptable mitigation plan. Mitigation will be implemented prior to ground disturbing activities.

4. All actions will be in conformance with visual resource and other management objectives as described in the Redding Land Use Plan.

5. Each development project will be evaluated through a cost/benefit analysis during the project planning phase.

Part V. Appendices

APPENDIX A

Glossary of Terms

1. Off-Road Vehicle: An "off-road vehicle" is any motorized vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain excluding: (a) any nonamphibious registered motorboat; (b) any military, fire, emergency, or law enforcement vehicle while being used for emergency purposes; (c) any vehicle whose use is specifically authorized by the authorized officer or otherwise officially approved; (d) official use; (e) any combat or combat support vehicle when used in times of national defense emergencies.

2. User Day: Any calendar day or portion thereof, for each individual accompanied or serviced by an operator or permittee on the public lands.

3. Public Lands: Any lands the surface of which is administered by the Bureau of Land Management.

4. Visual Resource Management Class II: Changes in any of the basic elements (form, line, color, texture) caused by a management activity should not be evident in the characteristic landscape. A contract may be seen but should not attract attention.

5. Visitor Hour: Occupancy of the public lands by one individual for one hour or part thereof.

6. ROS: Recreation Opportunity Spectrum (see Appendix D).

APPENDIX B

Participants in the Planning Effort

BLM Participants	Title	Resource Values Assigned/Function
Joseph O.I. Williams	Outdoor Recreation Planner	All
Leo Lawhorn	Wildlife Biologist	Wildlife/Fisheries
Carl Gammon	Realty Specialist	Lands
Phil Stanbro	Public Information Officer/ Environmental Coordinator	Public Participation
Eric Ritter	Archaeologist	Cultural Resources
M. James Francis	Supervisory Forester	Forestry
John Foster	Landscape Architect	VRM/Design
Ron Rogers	Minerals Specialist	Minerals
Robert Korfhage	Lands & Resource Branch Chief	All
Robert Bainbridge	Area Manager	All
Howard Matzat	Outdoor Recreation Planner	Boating
Stanley Whitmarsh	Outdoor Recreation Planner	Quality Control

USFS Participants	
David Flohr	Assistant Recreation Officer-Shasta Trinity NF
Paul Weeden	Lands & Recreation Officer-Big Bar Ranger District

Non-Federal Participants	Affiliation
Jim Smith	Trinity County Supervisor
Jeff Shields	Trinity County Planning Department
Pat Hamilton	Trinity Journal
Herbert Woods	Trinity County Historical Society
Robert R. Van Kirk	Humboldt State University
Harold F. Waraas	The Resources Agency, State of California
Birdie Coleman	Resident citizen
M. J. Simeone	Resident citizen
Charles Barocco	Resident citizen
Hal Goodyear	Resident citizen
Dick Stiliha	Resident citizen
Jamie Flower	Resident citizen
Neil Rucker	Yu-Kan Canoe
O. K. Goodwin	World of Whitewater
James Reed	Resident citizen

APPENDIX C

Summary of Alternatives

The Management Program (Part III) was developed from an analysis of multiple potential management actions which had been identified for each of the major issues identified through the scoping and public participation process. Those potential action alternatives which could not be implemented and/or did not meet the test of issue resolution are listed below by the issue for which they were identified.

Issue P-1 - Unauthorized Use

Alternative A: Create additional river accesses using timber haul roads.

Alternative B: Post restrictions on unauthorized use.

Issue P-2 - User Conflicts

Alternative A: Modify land resources to encourage single uses.

Alternative B: Restrict conflict generating recreational uses.

Issue P-3 - Camping Related Hazards

Alternative A: Require permits for all camping within the river area.

Issue P-4 - Carrying Capacity

Alternative A: Advertise availability of underutilized sites during low visitation periods.

Alternative B: Require permits and fees for all activities which have reached capacity within the area.

Alternative C: Rehabilitate overutilized sites.

Alternative D: Restrict uses which exceed carrying capacity.

Issue S-5 - Off-Road Vehicle Use

Alternative A: Stabilize erodable off-road vehicle use areas.

Alternative B: Develop and post special rules to regulate off-road vehicle use.

Issue S-6 - Recreational Mining

Alternative A: Encourage recreational mining of sediment overburden (deposition) areas in the river.

Issue P-1 - Access Shortages

Alternative A: Exchange public lands within the river corridor for more desirable private lands.

Issue P-2 - Additional Campground Needs

Alternative A: Seek cooperative agreements with large private landowners to gain access to potential campsites.

Alternative B: Selectively cut timber along the river to clear potential primitive camping areas.

Issue P-3 - Pit Stops

Alternative A: Require permittees to establish their own human waste disposal arrangements.

Issue P-4 - Land Exchanges

Alternative A: Seek land exchanges in order to remove hazards presently extant on private lands along the river.

Alternative B: Regulate recreational mining on lands acquired through exchange.

Issue P-5 - Disposal of Sediments from Fish Habitat Improvement Operations

Alternative A: Develop a programmatic environmental assessment and agreement with Calif. Dept. of Fish and Game, The Trinity River Task Force and Trinity County to cover all sediment removal and disposal operations in the river area.

Issue P-7 - Streamside Trails

Alternative A: Designate existing and future trails as National Recreation Trails.

Alternative B: Close all trails to motorized vehicle use.

Issue P-8 - Mini-Hydroelectric Projects

Alternative A: Close the river area to any mini-hydroelectric development.

Issue P-9 - Instream Hazards

Alternative A: Require use of non-breakable beverage containers on public lands.

Alternative B: Require commercial permittees to mitigate instream hazards.

Alternative C: Modify the natural environment to eliminate hazardous conditions.

Alternative D: Require minimum equipment standards for all boaters using the river.

Issue P-10 - Rights-of-Way

Alternative A: Try to develop a greater awareness of and appreciation for aesthetics among the river area residents.

Alternative B: Establish special zones for rights-of-way with special standards for color, height, materials, etc.

Issue M-1 - Data Base Development

Alternative A: Maintain recreation use records through extrapolation from reported use by commercial river outfitters.

Alternative B: Contract special resource information studies to develop recreation use data and analysis.

Issue M-4 - Pesticide Use

Alternative A: Utilize only non-residual pesticides in developed areas.

Issue M-5 - Camping Restrictions

Alternative A: Develop a special primitive camping permit system for camping use of undeveloped areas along the river.

Alternative B: Request assistance from Trinity County for mitigating adverse environmental impacts created by mining activity on public lands.

Issue M-7 - Volunteers

Alternative A: Establish a volunteer search and rescue organization to assist in SAR operations and provide first aid on public lands along the river.

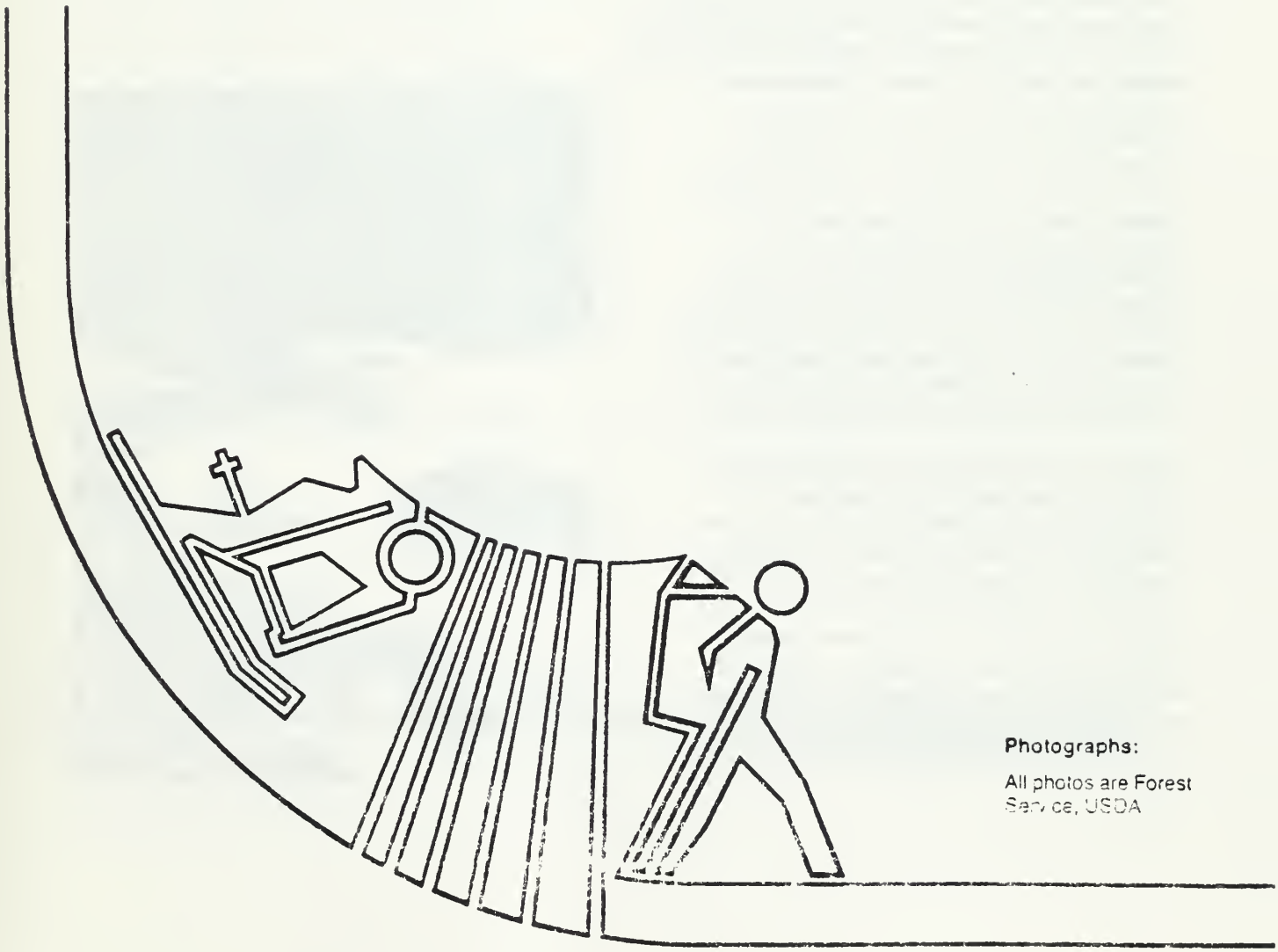
Alternative B: Solicit voluntary money contributions to support facility development along the river.

United States Department of Agriculture

Forest Service

ROS

Users Guide



Photographs:

All photos are Forest Service, USDA

This handbook chapter serves as a guide for the recreation resource input to Land and Management Planning. It incorporates the Recreation Opportunity Spectrum as the basic framework for inventorying, planning and managing the recreation resource in accordance with the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA), as amended by the National Forest Management Act of 1976 (NFMA).

11—RECREATION

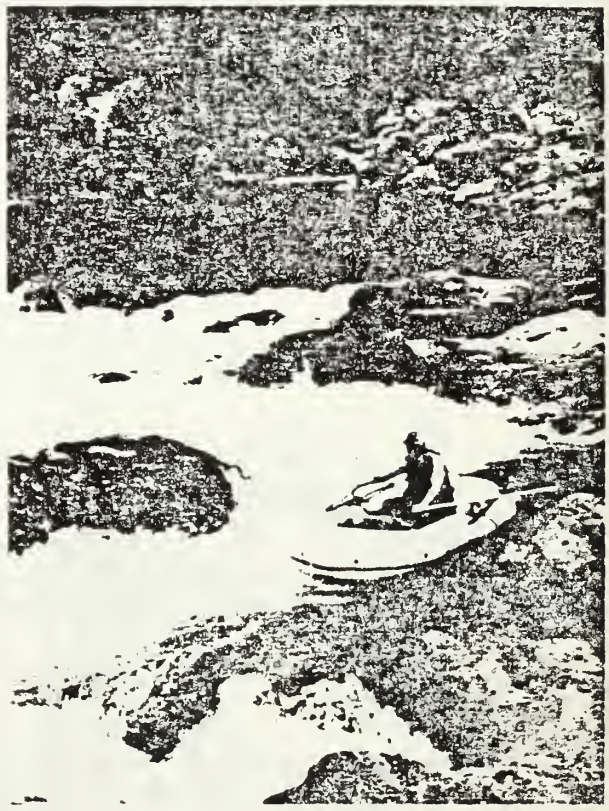
Many definitions of recreation exist, each emphasizing some slightly different aspect of this complex phenomenon called "recreation." In the *Recreational Use of Wild Lands*, Frank Brockman defines recreation as "the pleasurable and constructive use of spare time." Howard Danford, in *Creative Leadership in Recreation*, defines recreation as "any socially desirable leisure activity in which an individual participates voluntarily and from which he derives immediate and continuing satisfaction." *Webster* defines recreation as "refreshment in mind and body."

The sense of creativeness, refreshment and pleasure which the recreationist has while recreating or having a good time can be viewed as the recreationist "realizing satisfactory experiences." The recreationist attains these satisfactory experiences by participating in preferred recreation activities in preferred surroundings or settings. Therefore although the recreation resource manager manages settings, he or she does so to provide opportunities for recreation experiences and the benefits those experiences produce for individuals and society. Those experiences are influenced by many factors, the settings, the activities, other resources present, activities by managers, and by the values, expectations and other characteristics of the recreationists. These factors interrelate to define outdoor recreationists' needs and the way these needs are met by management action.

"Managing for recreation requires different kinds of data and management concepts than does most other activities. While recreation must have a physical base of land or water, the product—recreation experience—is a personal or social phenomenon. Although the management is resource based, the actual recreational activities are a result of people, their perceptions, wants, and behavior." (From: Final Report of the Committee of Scientists for Implementation of Section 6 of the National Forest Management Act of 1976, February 22, 1979, as published in the Federal Register, Part V, May 4, 1979, p. 26628.)

12—RECREATION OPPORTUNITY

The word opportunity is defined as a "combination of circumstances favorable for a purpose." The purpose or goal of the recreationist, as discussed above, is to realize satisfying experiences. This is done by participating in preferred activities in preferred environmental settings. Thus, recreation opportunity is "the availability of a real choice for a user to participate in a preferred activity within a preferred setting, in order to realize those satisfying experiences which are desired."



13—RECREATION OPPORTUNITY SPECTRUM

While the goal of the recreationist is to obtain satisfying experiences, the goal of the recreation resource manager becomes one of providing the opportunities for obtaining these experiences. By managing the natural resource settings, and the activities which occur within it, the manager is providing the opportunities for recreation experiences to take place. Therefore, for both the manager and the recreationist, recreation opportunities can be expressed in terms of three principal components: the activities, the setting, and the experience.

For management and conceptual convenience possible mixes or combinations of activities, settings, and probable experience opportunities have been arranged along a spectrum, or continuum. This continuum is called the Recreation Opportunity Spectrum (ROS) and is divided into six classes (Figure 1). The six classes, or portions along the continuum, and the accompanying class names have been selected and conventionalized because of their descriptiveness and utility in Land and Resource Management Planning and other management applications.

Each class is defined in terms of its combination of activity, setting, and experience opportunities (Table 1). Subclasses may be established to reflect local or regional conditions as long as aggregations can be made back to the six major classes for regional or national summaries. An example of a subclass may be a further breakdown of Roaded Natural into subclasses based on paved, oiled, or dirt surfaced roads, which in turns reflects amount of use, or a further breakdown of Primitive based upon aircraft or boat use.

The Recreation Opportunity Spectrum provides a framework for defining the types of outdoor recreation opportunities the public might desire, and identifies that portion of the spectrum a given National Forest might be able to provide.

Figure 1

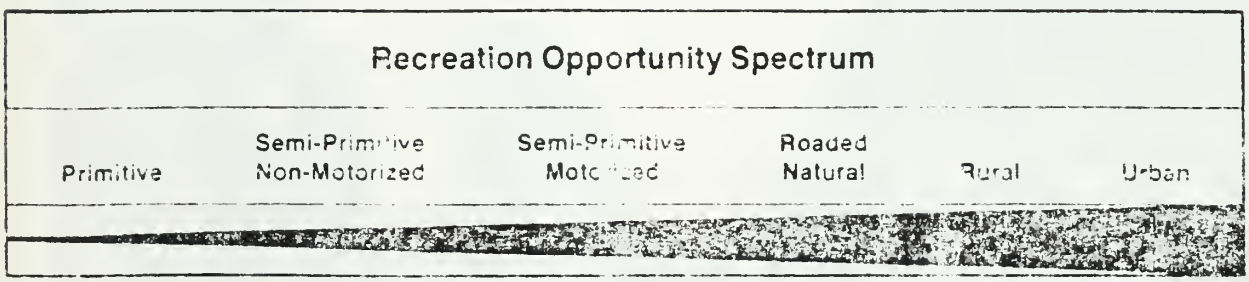


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Table 1

ROS
Activity Characterization*

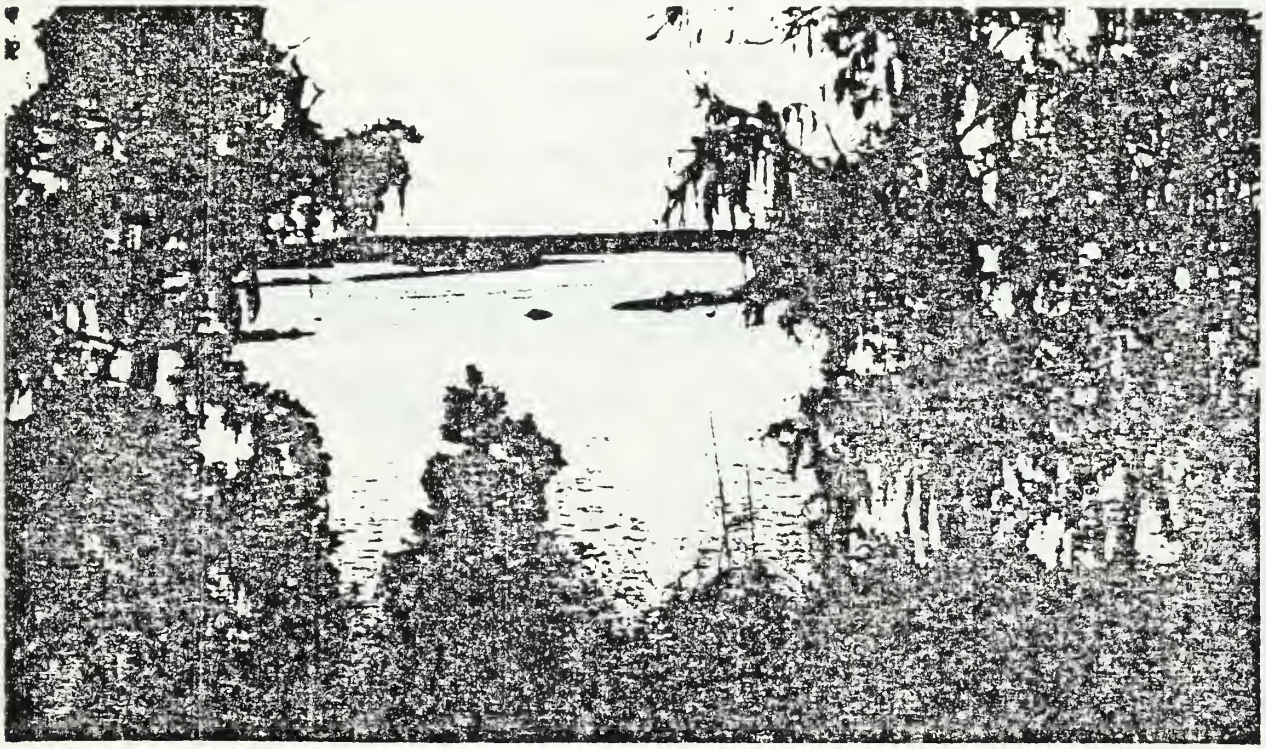
Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
Land Based (Includes Aircraft): Viewing Scenery Hiking and Walking Horseback Riding Camping (all) Hunting (all) Nature Study (all) Mountain Climbing General Information **Water Based:** Canoeing Sailing Other non-motorized watercraft Swimming Fishing (all) **Snow and Ice Based:** Snowplay X-Country Skiing/Snowshoeing	**Land Based (Includes Aircraft):** Viewing Scenery Automobile (off-road use) Motorcycles and Scooters Specialized landcraft Aircraft (motorized) Hiking and Walking Horseback Riding Camping (all) Hunting (all) Nature Study (all) Mountain climbing General Information **Water Based:** Boating (powered) Canoeing Sailing Other watercraft Swimming Diving (skin or scube) Fishing (all) **Snow and Ice Based:** Ice and Snowcraft Skiing, downhill Snowplay X Country Skiing/snow shoeing	**Land Based (Includes Aircraft):** Viewing Scenery Viewing Activities Viewing Works of Human Kind Automobile (includes off road use) Motorcycles and Scooters Specialized landcraft Train and bus touring Aircraft (motorized) Aerial trams and lifts Aircraft (non-motorized) Hiking and Walking Bicycling Horseback riding Camping (all) Organization Camping (all) Picnicking Resort and Commercial services Resort Lodging Recreation Cabin use Hunting (all) Nature Studies (all) Mountain climbing Gathering Forest Products Interpretive Services (all) **Water Based** Tour Boat and Ferry Boat Powered Canoeing Sailing Other watercrstt Swimming and waterplay Diving (skin and scuba) Waterskiing and water sports Fishing (all) **Snow and Ice Based:** Ice and Snowcraft Ice Skating Sledding and Tobagganing Downhill skiing Snowplay X Country skiing/snow shoeing	**Land Based:** Viewing Scenery Viewing Activities Viewing Works of Humankind Automobile (includes off-road use) Motorcycles and Scooters Specialized land-craft Train and bus touring Aircraft (motorized) Aerial trams and lifts Aircraft (non-motorized) Hiking and Walking Bicycling Horseback riding Camping (all) Organization Camping (all) Picnicking Resort and Commercial services Resort Lodging **Land Based (includes Aircraft)** Recreation Cabin use Hunting (all) Nature Studies (all) Mountain climbing Gathering Forest Products Interpretive Services (all) Team Sports Individual Sports Games and Play **Water Based** Tour Boat and Ferry Boat Powered Canoeing Sailing Other watercraft Swimming and waterplay Diving (skin and scuba) Waterskiing and water sports Fishing **Snow and Ice Based** Ice and Snowcraft Ice skating Sledding and Tobagganing Downhill skiing Snowplay X-Country skiing/snow shoeing

*These activity characteristics (from R1 M FSH 2309.11) are illustrative only. Specific additions or exception of activities within a ROS class may occur depending upon local forest situations.

Table 1 (continued)

ROS Setting Characterization*					
Primitive	**Semi-Primitive Non-Motorized**	**Semi-Primitive Motorized**	**Roaded Natural**	**Rural**	**Urban**
Area is characterized by essentially unmodified natural environment of fairly large size. Interaction between users is very low and evidence of other users is minimal. The area is managed to be essentially free from evidence of human-induced restrictions and controls. Motorized use within the area is not permitted.	Area is characterized by a predominantly natural or natural-appearing environment of moderate to large size. Interaction between users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but are subtle. Motorized use is not permitted.	Area is characterized by a predominantly natural or natural-appearing environment of moderate to large size. Concentration of users is low, but there is often evidence of other users. The area is managed in such a way that minimum on-site controls and restrictions may be present, but are subtle. Motorized use is permitted.	Area is characterized by predominantly natural-appearing environments with moderate evidences of the sights and sounds of man. Such evidences usually harmonize with the natural environment. Interaction between users may be low to moderate, but with evidence of other users prevalent. Resource modification and utilization practices are evident, but harmonize with the natural environment. Conventional motorized use is provided for in construction standards and design of facilities.	Area is characterized by substantially modified natural-appearing environment. Resource modification and utilization practices are to enhance specific recreation activities and to maintain vegetative cover and soil. Sights and sounds of man are readily evident, and the interaction between users is often moderate to high. A considerable number of facilities are designed for use by a large number of people. Facilities are often provided for special activities. Moderate densities are provided far away from developed sites. Facilities for intensified motorized use and parking are available.	Area is characterized by a substantially urban-appearing environment, although the background may have natural-appearing elements. Renewable resource modification and utilization practices are to enhance specific recreation activities. Vegetative cover is often exotic and manicured. Sights and sounds of humans on-site are predominant. Large numbers of users can be expected both on-site and in nearby areas. Facilities for highly intensified motor use and parking are available, with forms of mass transit often available to carry people throughout the site.

*For tabulation for descriptive purposes only.
Use the five specific ROS class delineation criteria given in Table 2 to identify the actual areas to which these descriptions apply.



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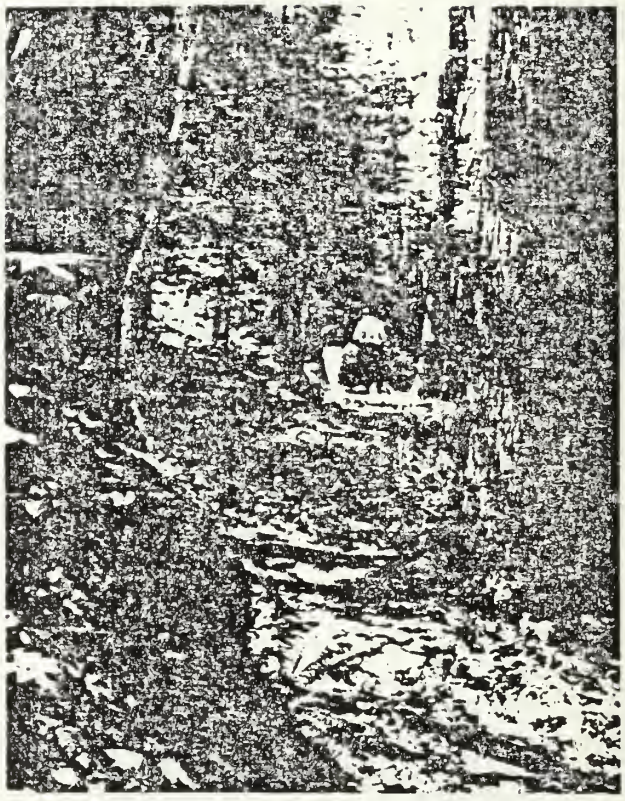


Table 1 (Continued)

ROS Experience Characterization*					
Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
Extremely high probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility and self reliance through the application of woodsman and outdoor skills in an environment that offers a high degree of challenge and risk.	High, but not extremely high probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility and self reliance through the application of woodsman and outdoor skills in an environment that offers challenge and risk.	Moderate probability of experiencing isolation from the sights and sounds of humans, independence, closeness to nature, tranquility and self reliance through the application of woodsman and outdoor skills in an environment that offers challenge and risk. Opportunity to have a high degree of interaction with the natural environment. Opportunity to use motorized equipment while in the area.	About equal probability to experience affiliation with other user groups and for isolation from sights and sounds of humans. Opportunity to have a high degree of interaction with the natural environment. Challenge and risk opportunities associated with more primitive types of recreation are not very important. Practice and testing of outdoor skills might be important. Opportunities for both motorized and non-motorized forms of recreation are possible.	Probability of experiencing affiliation with individuals and groups is important as is the development of skills and abilities. These factors are generally more important than the setting. Opportunities for wildland challenges and risk taking and testing of outdoor skills are generally unimportant except for specific activities like downhill skiing for which challenge and risk taking are important elements.	Probability of experiencing affiliation with individuals and groups is very important as is the development of skills and abilities. Experiencing the natural environment, challenges and risks afforded by the natural environment and the use of outdoor skills are relatively unimportant. Opportunities for competitive and spectator sports and for passive uses of highly human influenced parks and open spaces are common.

*These experiences are highly probable outcomes of participating in recreation activities in specific recreation settings.

14—RECREATION INPUT TO LAND AND RESOURCE MANAGEMENT PLANNING

Planning for recreation opportunities using the Recreation Opportunity Spectrum is conducted as part of Land and Resource Management Planning. The recreation input includes factors such as supply and demand, issues and identification of alternative responses to those issues which the planner must assess in order to develop management area prescriptions designed to assure the appropriate recreation experience through setting and activity management on the Forest.

Use of the Recreation Opportunity Spectrum and setting prescriptions as recreation input to Land and Resource Management Planning provides a framework for:

1. Establishing outdoor recreation management goals and objectives for specific management areas.
2. Trade-off analyses of available recreation opportunities as characteristic settings would be changed by other proposed resource management actions.
3. Monitoring outputs in terms of established standards for experience and opportunities settings.
4. Providing specific management objectives and standards for project plans.

9

Land and Resource Management Planning assures that National Forest System lands provide a variety of appropriate opportunities for outdoor recreation (FSM 2303.2). Each Forest need not provide an entire array of opportunities, but collectively the National Forest System will provide this variety. The appropriate roles of each Forest in providing opportunities should be established as part of the Land and Resource Management Planning process, and be identified in the Forest, Regional and National Plans.

15—MANAGEMENT PRESCRIPTIONS

In the Land and Resource Planning process the goals and objectives selected for a specific area (management area) are achieved through the implementation of management prescriptions. Prescriptions are closely integrated sets of specific management practices scheduled over the entire planning period or portions of the planning period. Most acres within a planning area have the inherent capability, to some degree, to provide recreation opportunities and experiences. Therefore management prescriptions for each management area should include consideration for recreation use.

The introductory portion of a management prescription states in a concise way the goals and objectives of the prescription, what resource outputs are being emphasized; and the expected future "condition of the Forest" which will result from application of the prescribed management actions. Alternative sets of management prescriptions are developed to reflect and evaluate emphasis of different resource output management directions.

Each prescription should contain minimum guidelines and standards to be met as well as directions concerning the type of activities, settings, and experience opportunities to be managed for during the planning time periods.

16—PROJECT PLANNING

The Recreation Opportunity Spectrum classes should be at a scale suitable for recreation management and land allocation purposes essential to the Land and Resource Management Planning process. For site-specific project plans the Recreation Opportunity Spectrum class directions for the management area within which the site is located should provide overall guidance to manage the site compatible with the kinds of recreation opportunities being provided by the larger area of which the site is a part.

20.1 The Supply Component

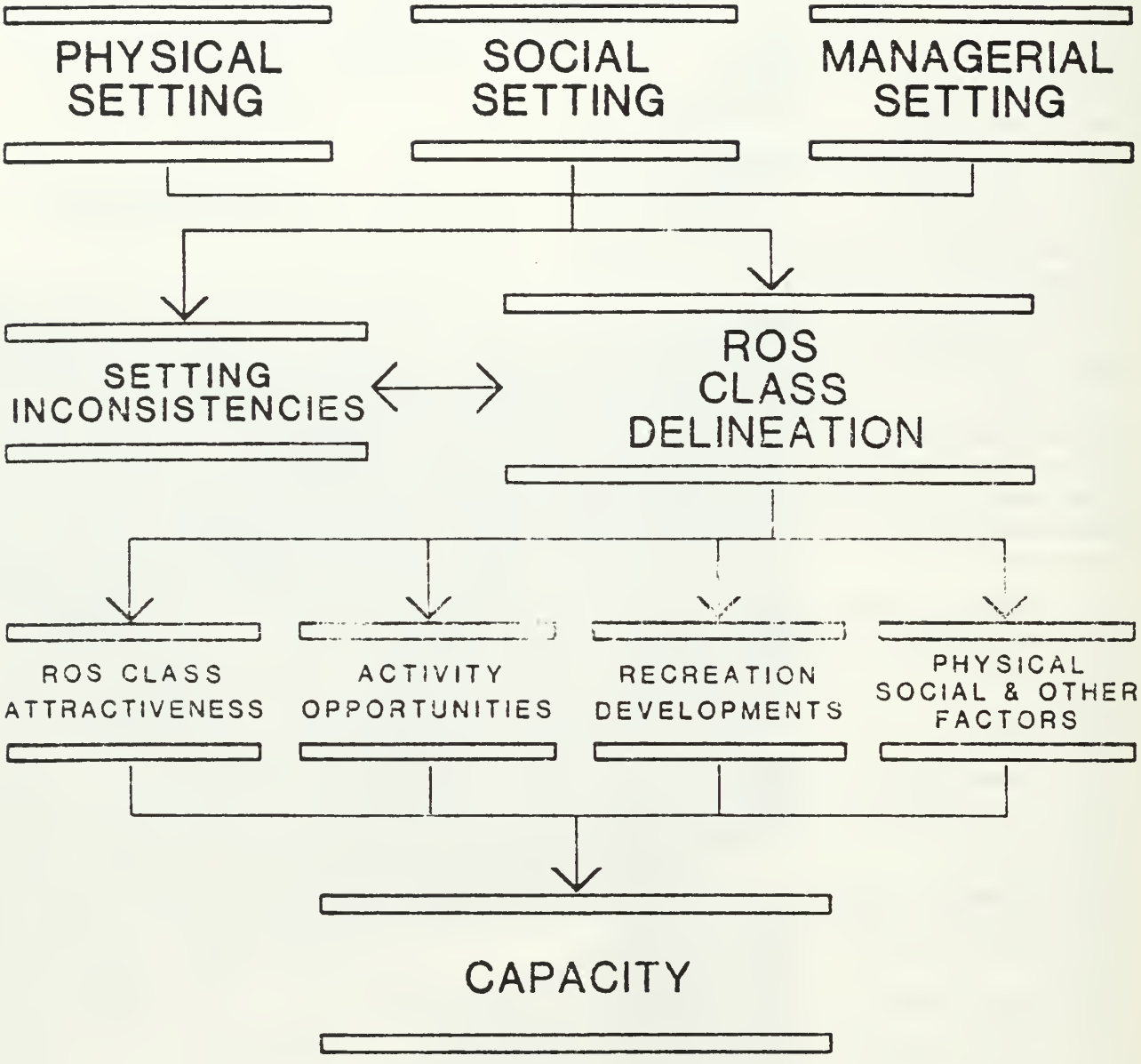
21 ROS CLASS DELINEATION
21.1 Wilderness — Special areas — Private Land
21.2 Physical Setting
21.21 Remoteness
21.22 Size of Area
21.23 Evidence of Humans
21.24 Physical Setting Map
21.3 Social Setting
21.31 Social Setting Overlay
21.32 Social Setting Mapping
21.4 Managerial Setting
21.41 Managerial Setting Mapping
21.5 Setting Inconsistencies
21.6 Seasonal Mapping

22 ROS CLASS ATTRACTIVENESS
22.1 Attractiveness Overlay
22.11 Variety Rating
22.12 Outstanding Features
22.13 Special Areas

23 ACTIVITY OPPORTUNITIES
23.1 Activity Identification
23.2 Activity Criteria

24 RECREATION DEVELOPMENTS
24.1 Existing Developments
24.2 Potential Developments
25 CAPACITY
25.1 Principal Factors Affecting Capacity
25.2 "Practical Maximum" Versus "Theoretical Maximum" Capacity
25.3 Capacity Determination
25.31 PAOT Approach
25.32 PAOT to RVD Conversion
25.33 RVD Approach
25.4 Use of Capacity Figures

20


PHYSICAL SETTING
SOCIAL SETTING
MANAGERIAL SETTING
SETTING INCONSISTENCIES
ROS CLASS DELINEATION
ROS CLASS ATTRACTIVENESS
ACTIVITY OPPORTUNITIES
RECREATION DEVELOPMENTS
PHYSICAL SOCIAL & OTHER FACTORS
CAPACITY

13

20.1—THE SUPPLY COMPONENT—The supply component of recreation input to Land and Resource Management Planning requires an inventory of recreation supply opportunities by Recreation Opportunity Spectrum class that are currently available as a result of existing conditions. It also requires for each alternative management prescription that a separate projection of potential supply by Recreation Opportunity Spectrum Class be developed. This information provides the basis for evaluation and determination of the management direction response to projected recreation demands.

21—ROS CLASS DELINEATION

The land and water areas of the Forest are inventoried and mapped by Recreation Opportunity Spectrum class to identify which areas are currently providing what kinds of recreation opportunities. This is done by analyzing the physical, social, and managerial setting components for each area. The characteristics of each of these three components of the setting affect the kind of experience the recreationist most probably realizes from using the area.

Table 2 shows mapping criteria which apply to each component of the setting. When conducting a Recreation Opportunity Spectrum inventory proceed through the criteria in the same sequence as that outlined in the Table. Definitions of the settings and step-by-step directions begin at Section 21.2.

Mapping the Recreation Opportunity Spectrum classes should be done on a map scale which allows an overall view of the planning area. A 1 inch = 1 mile scale is usually sufficient to provide this overview. If necessary the map information may be transferred to larger scale maps later in the data processing stage to conform with integrated data collection criteria.

Once the classes are mapped on the basis of the setting components, the activity opportunities within the classes are identified (Section 23-24), and the current capacity of the planning area to provide the opportunities is estimated (Section 25). Attractiveness by area and Recreation Opportunity Spectrum class may also be inventoried (Section 22) if relevant to the analysis of issues and concerns or other management planning needs.

Some alternative management prescriptions may require changes from the currently inventoried Recreation Opportunity Class delineation in order to meet the specified goals and objectives of the prescription. The classification changes in response to each alternative management prescription need to be specified and used to project the adjusted capacity or future supply by Recreation Opportunity Spectrum class.

Overlays should be used to document the projected changes needed in delineation or classification of the Recreation Opportunity Spectrum inventory in response to each alternative management prescription.

Table 2

Criteria Used For ROS Class Delineation

Setting Component	Mapping Criteria	Found In	Section
Physical	Remoteness	Table 3	21.21
	Size	Table 4	21.22
	Evidence of Humans	Table 5	
Social	User Density	Table 6	21.23
Managerial	Managerial Regimentation & Noticeability	Table 7	21.32 21.41

14

21.1—WILDERNESS-SPECIAL AREAS—PRIVATE LANDS—The Recreation Opportunity Spectrum inventory identifies the kinds or classes of recreation opportunities of an area as a function of its physical, social and managerial setting characteristics. The inventory helps identify what is actually happening on the land, and applies uniformily across, Wilderness, special areas, political or administrative boundaries and land ownership. Although some designated Wildernesses are composed largely of the Primitive type of recreation opportunity, many designated Wildernesses also include Semi-Primitive or Roaded-Natural opportunities. Therefore the Primitive Recreation Opportunity Spectrum class is not synonomous with designated Wilderness.

The Forest is inventoried using the Recreation Opportunity Spectrum criteria independently of any area designation. Inventory private lands within the Forest boundary and landownership adjacent to the boundary to the extent necessary to determine the affect of such land on the kinds of recreation opportunities available on the National Forest land. Application of the Recreation Opportunity Spectrum inventory outside the Forest boundaries may also be helpful in assessing the kind and amount of recreation opportunities available within the total planning area.

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21.2—PHYSICAL SETTING— The physical setting is defined by the absence or presence of human sights and sounds, size, and the amount of environmental modification caused by human activity. The physical setting is documented on an overlay by combining these three criteria as described below.

21.21—REMOTENESS— Remoteness from the sights and sounds of humans is used as an indicator of the opportunity to experience greater or lesser amounts of social interaction, and primitive to urban influences, as one moves across the spectrum.

To identify remoteness:

1—On the base map or overlay delineate all roads, railroads, and trails. Distinguish between two levels of roads, "primitive roads," and "better than primitive roads." Trails with motorized use are included in the "primitive road" category.

a. Road Classification—For roads which are difficult to classify into the "primitive road," or "better than primitive road" categories apply the definitions, which are that "better than primitive roads" are constructed or maintained vehicle ways for the use of highway type vehicles having more than two wheels. "Primitive roads" are not constructed or maintained, and are used by vehicles not primarily intended for highway use.

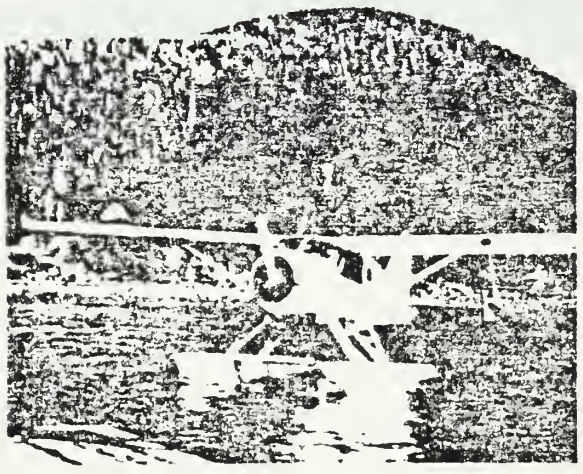
b. Sources of Road and Trail Information— Various sources can be used to obtain the transportation system information. Road classification and inventory Form 7700-9R is one such source. Three of the four road standards on the Form: graded and drained, aggregate surface, and pavement, apply to the "better than primitive road" category. The fourth standard is "primitive road" and includes "way, rut, track, not graded and drained."

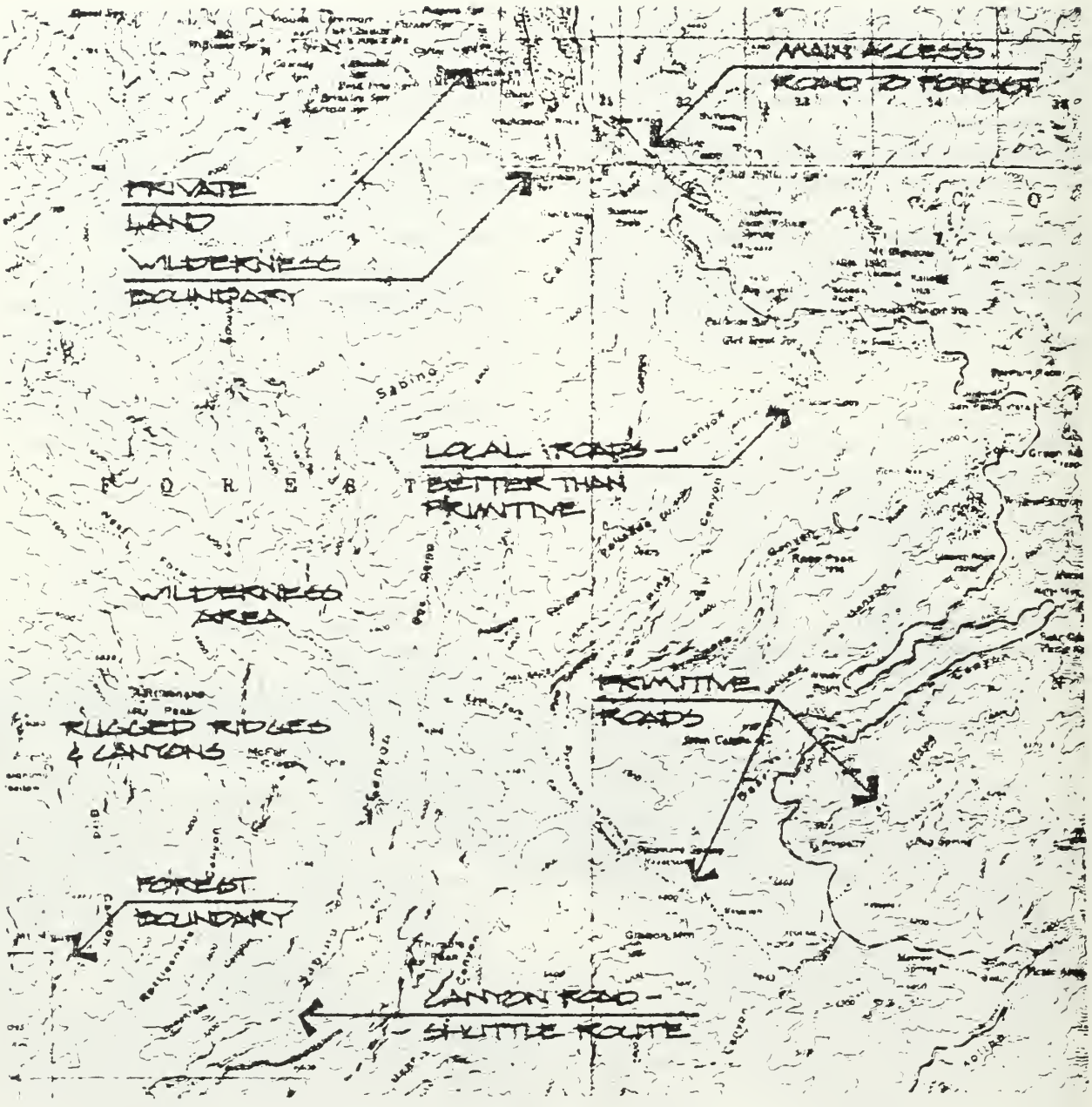
For trails Form 2300-9T (or older Form 7700-9T) is an information source. Distinguish between motorized and nonmotorized trails by symbol. For many Forests this information is in the ORV plan.

c. Road Patterns—In most cases all roads and trails are mapped. In areas with dense road patterns, (e.g. greater than 4 miles per section), it may not be necessary to identify each road for Recreation Opportunity Spectrum class delineation. The entire area will be road-influenced and become the same Recreation Opportunity Spectrum class. In these cases only the roads along the periphery of the densely roaded area are needed to define the Recreation Opportunity Spectrum class boundaries.

d. Traffic Volume— Although volume of traffic may vary widely on the "better than primitive roads," depending upon the specific road involved, volume need not be recorded on the base map or overlay. The physical presence and sight of a road, even with no traffic on it, still impacts the visitor experience and is accounted for through the Recreation Opportunity Spectrum criteria. If traffic volume results in sounds from a road at distances greater than the line of sight, then sound may become the determinant criteria in delineating the appropriate Recreation Opportunity Spectrum class.

2— Where air and motorized water travel routes provide the only access consider them in a manner similar to roads. These specialized types of access may also provide a basis to determine the need for Recreation Opportunity Spectrum subclasses.





the landbase

17

3—Using the distance guidelines of Table 3 develop a remoteness overlay. Table 3 is only a guide. Lines between Recreation Opportunity Spectrum classes should reflect topographic and vegetative differences which adequately screen out the sights and sounds of humans to the same extent, i.e., the same portion of the spectrum, as the generalized distance guidelines. Relatively flat terrain with low tree cover, or large bodies of water, may require greater distances to achieve screening for remoteness, while deep canyons or heavily wooded terrain might provide equivalent screening with less distance. The fundamental determinant is the type of experience opportunities which either currently exist or might exist given the alternative management prescription assumptions.

a. Step One—In developing the remoteness overlay it is often easiest to begin by drawing the lines separating the Roaded Natural class from the Semi-Primitive Motorized class. This in effect divides the spectrum, with areas on one side of the line either Primitive or Semi-Primitive, and areas on the other side Roaded Natural, Rural, or Urban. The Roaded Natural Rural, and Urban classes are distinguished from one another using the Evidence of Humans criteria in Table 5 page 22. No further separation therefore occurs in the relation to the remoteness criteria.

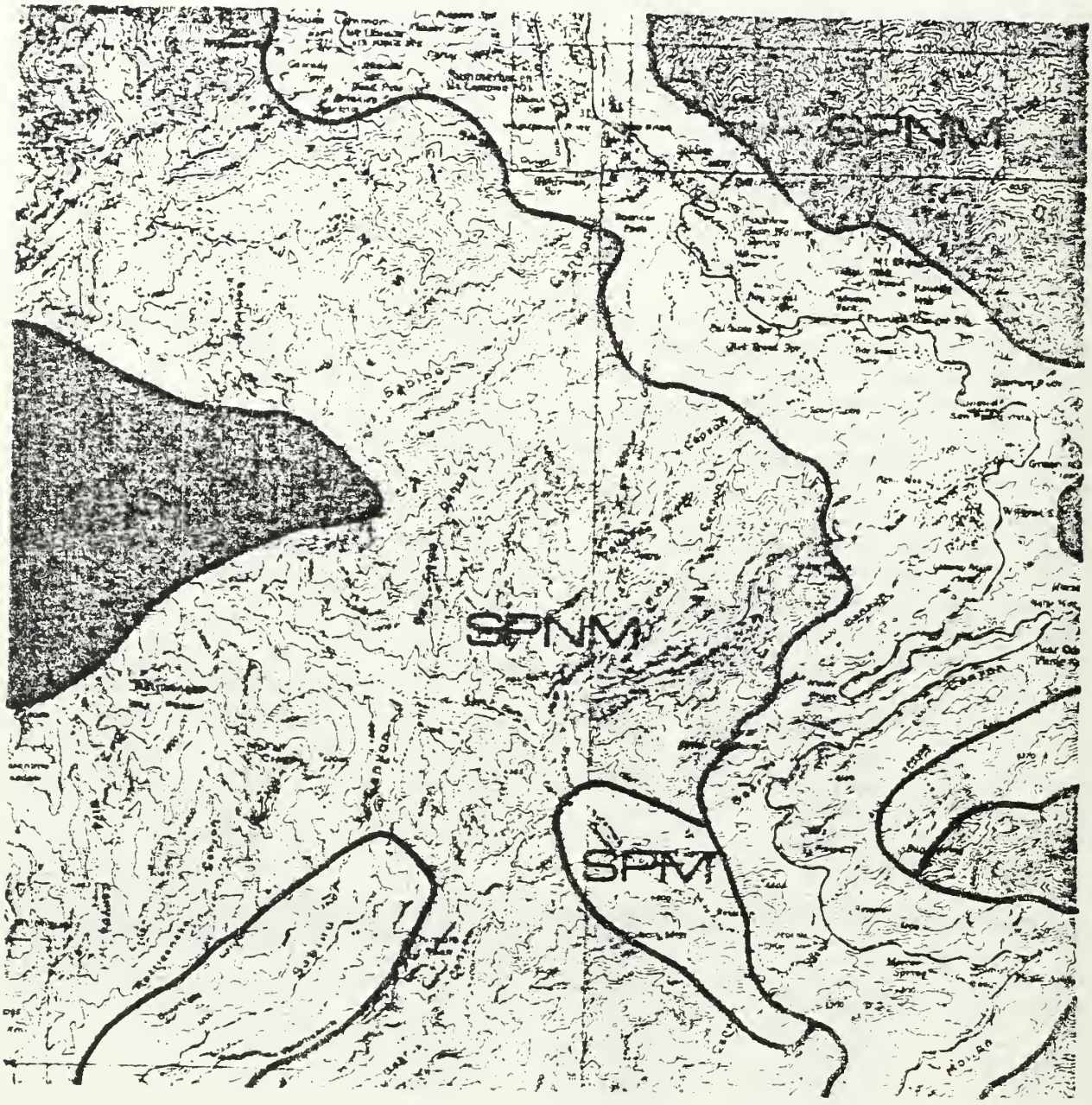
b. Step Two—Next delineate the Semi-Primitive Motorized class by a line approximately one-half mile—depending upon vegetation and terrain—from primitive roads and trails with motorized use. The Semi-Primitive Nonmotorized and Primitive portion of the spectrum now remain.

c. Step Three—Finally, delineate the Primitive class by a line approximately three miles from all roads, railroads, or trails with motorized use. All areas between the Primitive class line and Semi-Primitive Motorized line. are classified as Semi-Primitive Nonmotorized.

Table 3

Remoteness Criteria*					
Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
An area designated at least 3 miles from all roads, railroads or trails with motorized use	An area designated at least ½-mile but not further than 3 miles from all roads, railroads or trails with motorized use; can include the existence of primitive roads and trails if usually closed to motorized use.	An area designated within ½-mile of primitive roads or trails used by motor vehicles, but not closer than ½-mile from better than primitive roads.	An area designated within ½-mile from better than primitive roads, and railroads.	No distance criteria.	No distance criteria

*The criteria can be modified to conform to natural barriers and screening or other relevant features of local topographic relief and vegetative cover. This fits the criteria to the actual Forest landscape



remoteness

21.22—SIZE OF AREA—Size of area is used as an indicator of the opportunity to experience self-sufficiency as related to the sense of vastness of a relatively undeveloped area. In some settings application of the remoteness criteria (Table 3) assures the existence of these experience opportunities; in other settings the remoteness criteria alone do not. Therefore, apply the size criteria, Table 4, to the map or overlay developed using the remoteness criteria to insure that the appropriate experience opportunities are available.

Table 4

Size Criteria					
Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
5,000 acres*	2,500 acres**	2,500 acres	No size criteria.	No size criteria.	No size criteria.

*May be smaller if contiguous to Semi-Primitive Non-Motorized Class.
**May be smaller if contiguous to Primitive Class.

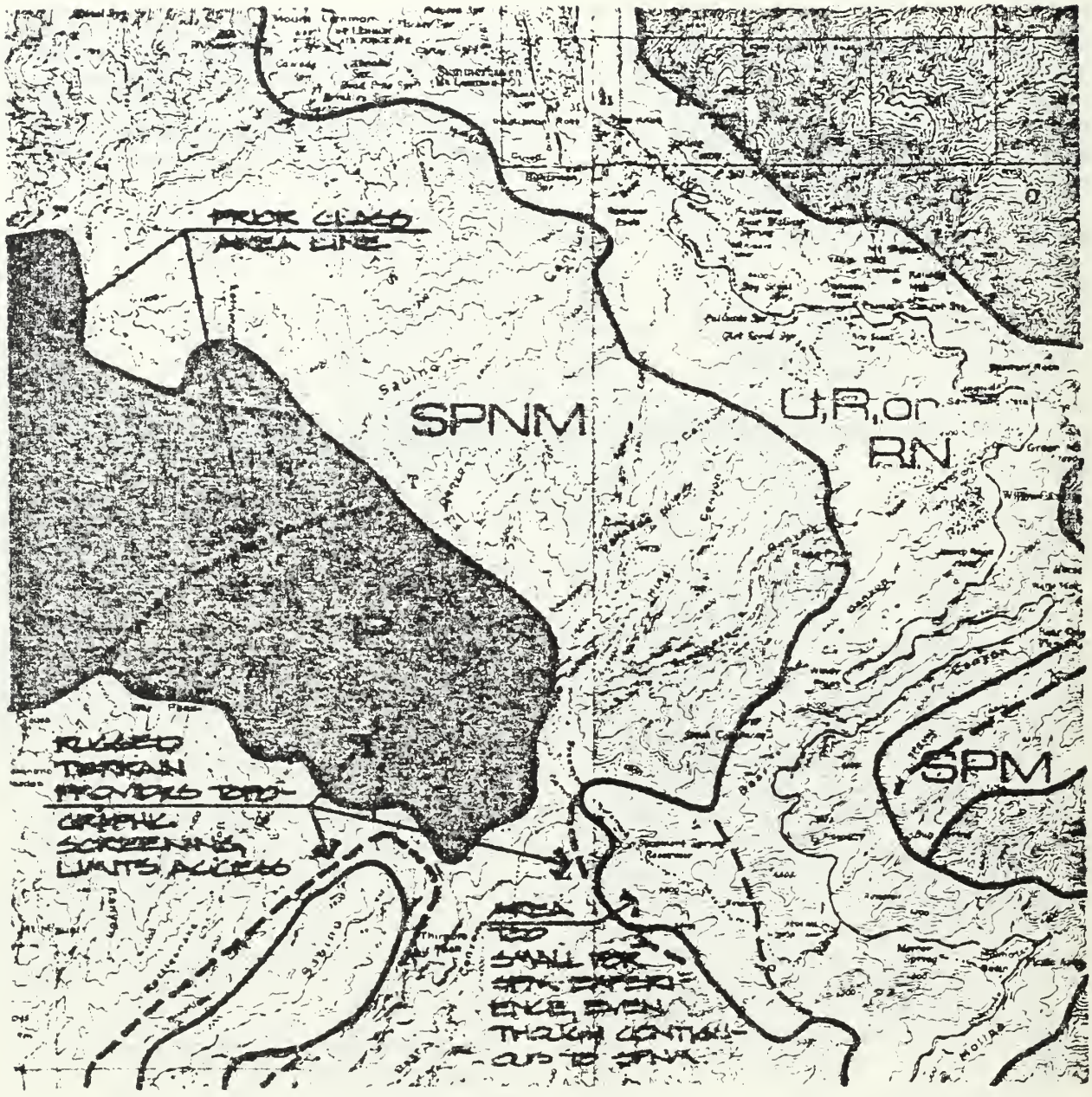
1—Area Adjustments—Situations where an area identified on the remoteness overlay is slightly smaller than the size criteria for a Primitive or Semi-Primitive class—or the area is a unique entity for some other reason—may require individual consideration. If the area is sufficiently added to, or buffered by, the next contiguous class it may still provide the kinds of opportunities which would more certainly occur if the area were larger. The decision as to whether this condition applies—or as to whether the area is for some other reason unique relative to the surrounding area and provides a given class of opportunity in spite of its size (e.g., an island)—requires local knowledge of the area and its features on the part of the planner.

21.23—EVIDENCE OF HUMANS—Evidence of Humans is used as an indicator of the opportunity to recreate in environmental settings having varying degrees of human influence or modification.

Apply the Evidence of Humans criteria given in Table 5 to determine whether the impact of human modification on the landscape is appropriate for each class designation on the inventory overlay. If the Evidence of Humans is more dominant than indicated for the designated Recreation Opportunity Spectrum class, adjust the class boundaries on the overlay so the designations accurately reflect the situation. If the class boundaries change markedly reevaluate the size of the classes (Table 4) to make sure size remains adequate.

The Evidence of Humans criteria for each Recreation Opportunity Spectrum class is primarily based on the visual impact and affect of modifications on the recreation experience, as distinguished from only the physical existence of modifications. The criteria take into account the variation in visual absorption capacity of different landscapes.

1—Evidence of Humans Criteria and the Visual Management System—While in some ways it seems possible to equate Visual Quality Objectives, or a range of objectives, with each Recreation Opportunity Spectrum class the function of the Evidence of Humans Criteria in the Recreation Opportunity Spectrum is not the same as Visual



area & landform adjustments

21

Quality Objectives in the Visual Management System and equating the two is not recommended. For example, middle and background Visual Management System areas are often where Primitive and Semi-Primitive Recreation Opportunity Spectrum classes occur. A retention or partial retention Visual Quality Objective given to such an area for management direction could have a vastly different meaning than the delineated Recreation Opportunity Spectrum class.

Thus identify the Recreation Opportunity Spectrum classes through the setting descriptions in the Evidence of Humans Criteria, Table 5, and not through use of Visual Quality Objectives. To assist in this, the Evidence of Humans Criteria are purposely worded differently than the definitions of Visual Quality Objectives.

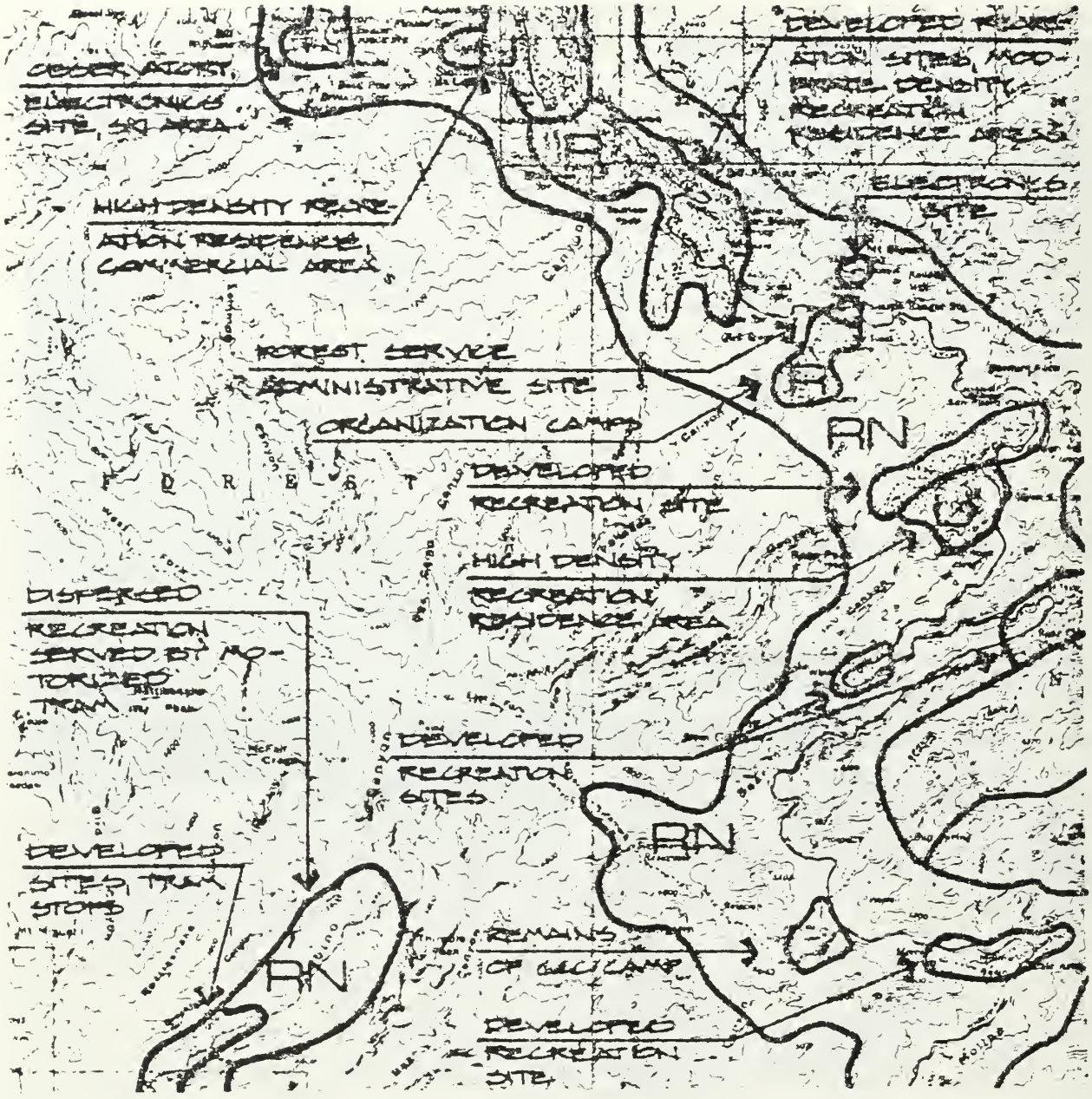
Forests which have completed an Existing Visual Condition inventory as part of their Visual Management System can use this information to assist in using the Evidence of Humans Criteria. However, interpretation of Existing Visual Condition data (short of determining Visual Condition Type) on location and size of existing human activities can be a helpful aid in determining the Recreation Opportunity Spectrum class.

Table 5

Evidence of Humans Criteria

Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
Setting is essentially an unmodified natural environment. Evidence of humans would be unnoticed by an observer wandering through the area	Natural* setting may have subtle modifications that would be noticed but not draw the attention of an observer wandering through the area	Natural* setting may have moderately dominant alterations but would not draw the attention of motorized observers on trails and primitive roads within the area	Natural* setting may have modifications which range from being easily noticed to strongly dominant to observers within the area. However, from sensitive** travel routes and use areas these alterations would remain unnoticed or visually subordinate	Natural* setting is culturally modified to the point that it is dominant to the sensitive** travel route observer. May include pastoral agricultural, intensively managed wildland resource landscapes or utility corridors. Pedestrian or other slow moving observers are constantly within view of culturally changed landscape	Setting is strongly structure dominated. Natural or natural-appearing elements may play an important role but be visually subordinate. Pedestrian and other slow moving observers are constantly within view of artificial enclosure of spaces
Evidence of trails is acceptable, but should not exceed standard to carry expected use	Little or no evidence of primitive roads and the motorized use of trails and primitive roads	Strong evidence of primitive roads and the motorized use of trails and primitive roads	There is strong evidence of designed roads and or highways	There is strong evidence of designed roads and or highways	There is strong evidence of designed roads and or highways and streets
Structures are extremely rare	Structures are rare and isolated	Structures are rare and isolated	Structures are generally scattered, remaining visually subordinate or unnoticed to the sensitive** travel route observer. Structures may include powerlines microwave installations and so on	Structures are generally apparent and may be grouped or scattered to small dominant clusters including powerlines microwave installations local use area as minor resorts and recreation sites	Structures and structure complexes are dominant and may include major resorts and marinas national and regional parks areas towns industrial sites condominiums or second home developments

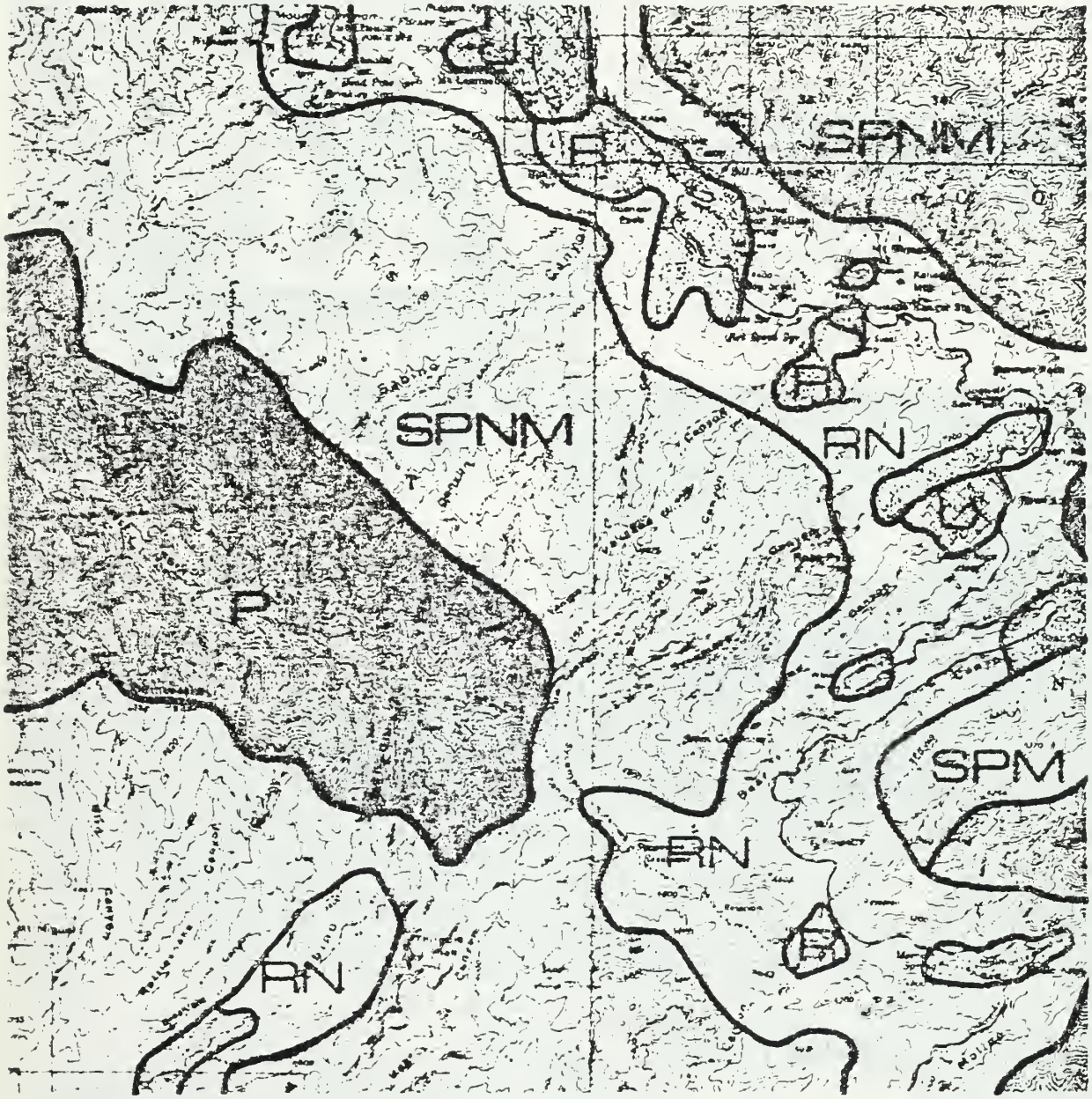
*In many southern and eastern forests what appears to be natural landscapes may in actuality have been strongly influenced by humans. The term natural appearing may be more appropriate in these cases.
**Sensitivity level 1 and 2 travel routes from Visual Management System (USDA Handbook 461



evidence of humans

23

21.24—PHYSICAL SETTING MAP — The result of completing the remoteness, size, and evidence of humans steps (Sections 21.2 -21.23) is the physical setting map (or overlay).



physical setting

21.3—SOCIAL SETTING—The social setting reflects the amount and type of contact between individuals or groups. It indicates opportunities for solitude, for interactions with a few selected individuals, or for large group interactions.

21.31—SOCIAL SETTING OVERLAY—In many cases it is easiest to document the social setting (and managerial setting, Section 21.4) component on a separate overlay from the physical setting. However, Forests without complex social or managerial settings may prefer to record their information on the same physical setting overlay rather than prepare a second overlay. Whichever method is used, label the social and managerial information clearly for future identification.

21.32—SOCIAL SETTING MAPPING—Apply the "user density" criteria in Table 6. These criteria are used as a measure of user interaction.

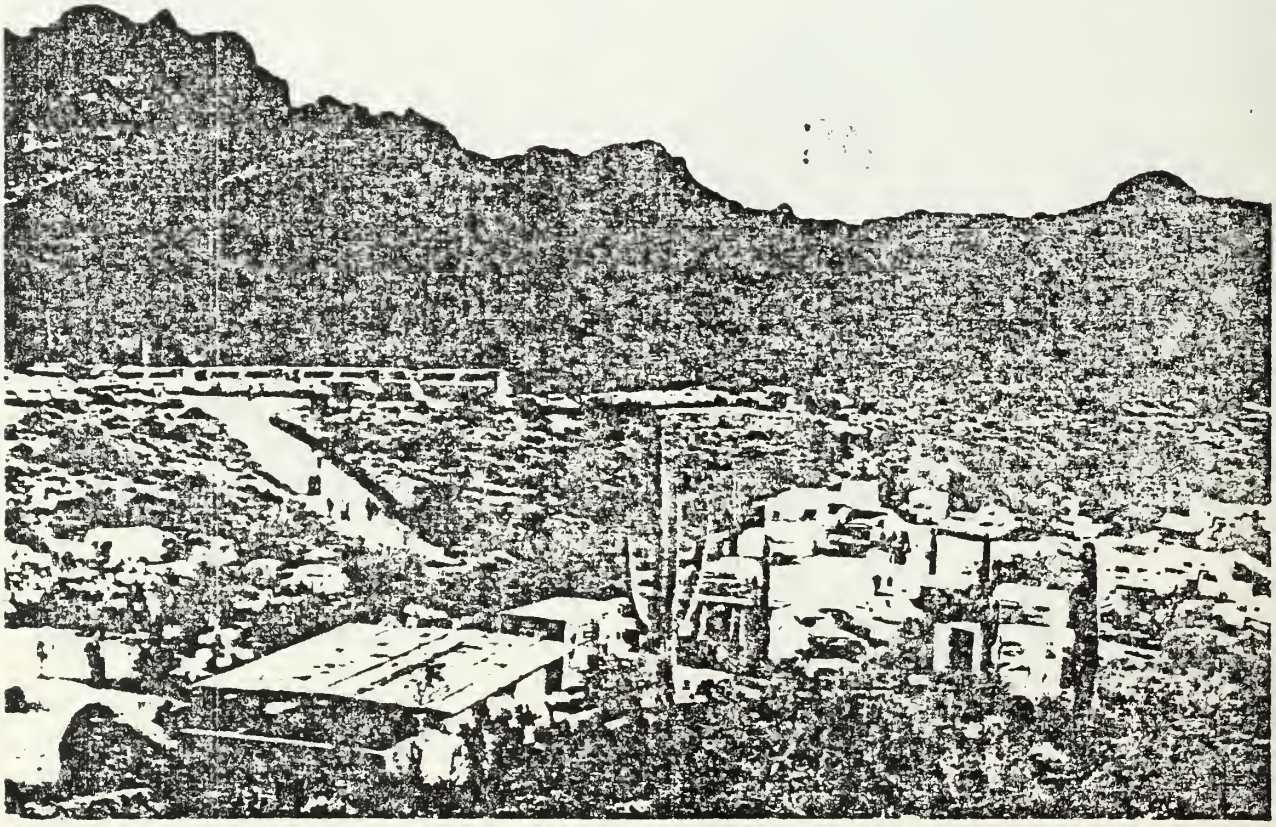


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Table 6

Social Setting Criteria*					
Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
Usually less than 6 parties per day encountered on trails and less than 3 parties visible at campsite	Usually 6 -15 parties per day encountered on trails and 6 or less visible at campsites	Low to moderate contact frequency**	Frequency of contact is ** Moderate to High on roads. Low to Moderate on trails and away from roads	Frequency of contact is ** Moderate to high in developed sites, on roads and trails, and water surfaces. Moderate away from developed sites	Large numbers of users on site and in nearby areas

*These criteria apply during the typical recreation use season. Peak days may exceed these limits.
**Specific numbers must be developed to meet regional or local conditions.

In areas of concentrated use the social setting criteria may not result in the same Recreation Opportunity Spectrum class as the physical setting criteria for the area. When this occurs a "setting inconsistency" is taking place. Setting inconsistencies are discussed in Section 21.5.

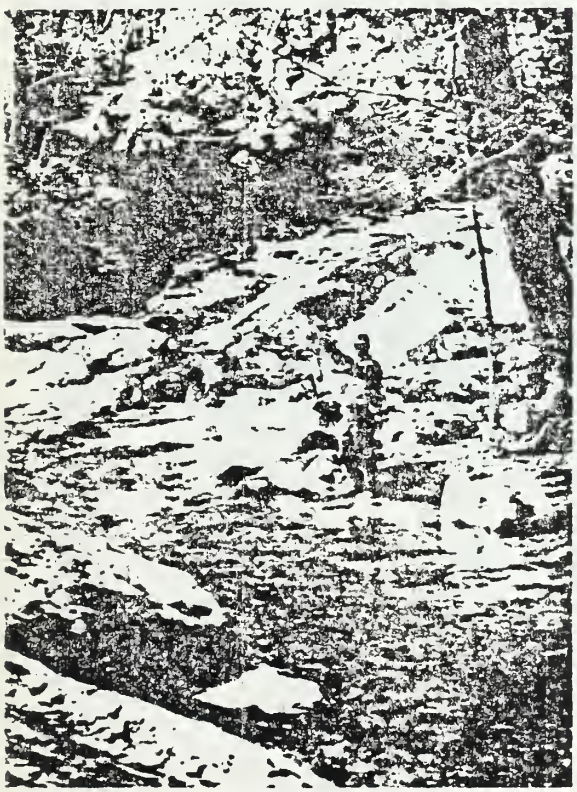
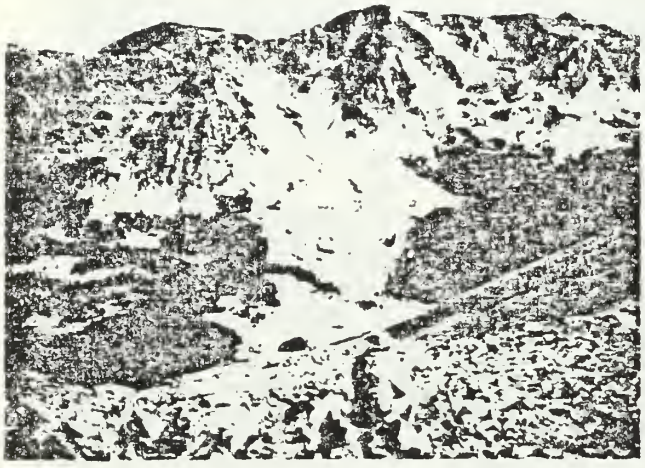


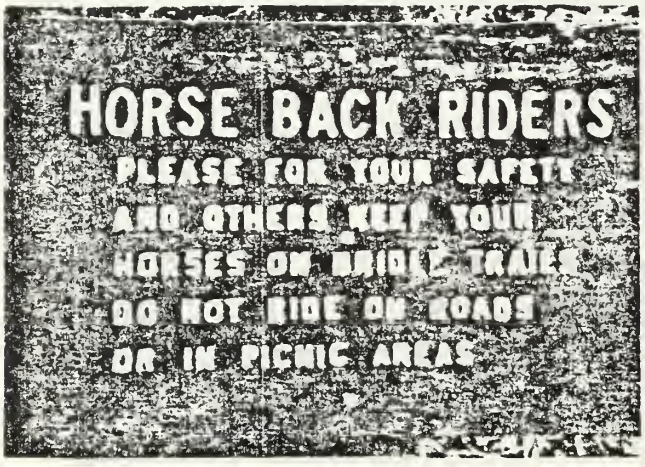
Table 7

Managerial Setting Criteria

Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
On-site regimentation is low with controls primarily off-site	On-site regimentation and controls present but subtle	On-site regimentation and controls present but subtle	On-site regimentation and controls are noticeable but harmonize with the natural environment	Regimentation and controls obvious and numerous largely in harmony with the man-made environment	Regimentation and controls obvious and numerous

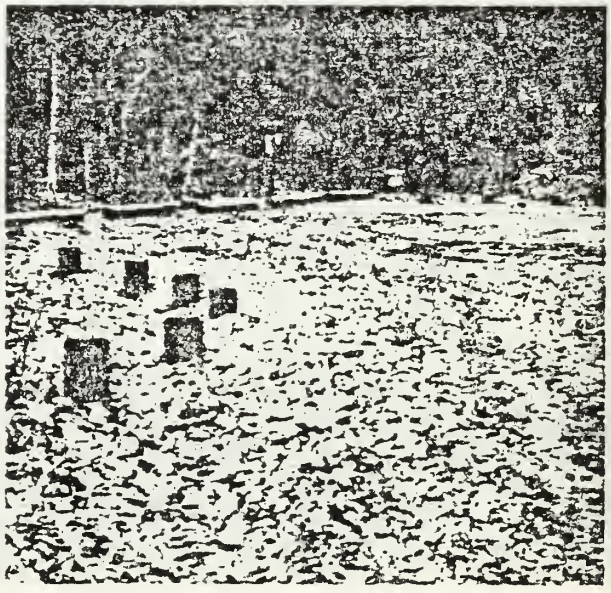
Controls can be physical (such as barriers) or regulatory (such as permits)




HORSE BACK RIDERS
PLEASE FOR YOUR SAFETY
AND OTHERS KEEP YOUR
HORSES ON BRIDLE TRAILS
DO NOT RIDE ON ROADS
OR IN PICNIC AREAS

21.4—MANAGERIAL SETTING—The managerial setting reflects the amount and kind of restrictions placed on people's actions by the administering agency or private landowner which affect recreation opportunities

21.41—MANAGERIAL SETTING MAPPING—Apply the managerial regimentation and noticeability criteria in Table 7. Place the information on the social setting overlay, or on the physical setting overlay if a separate social setting is not used. Label the information for future identification.



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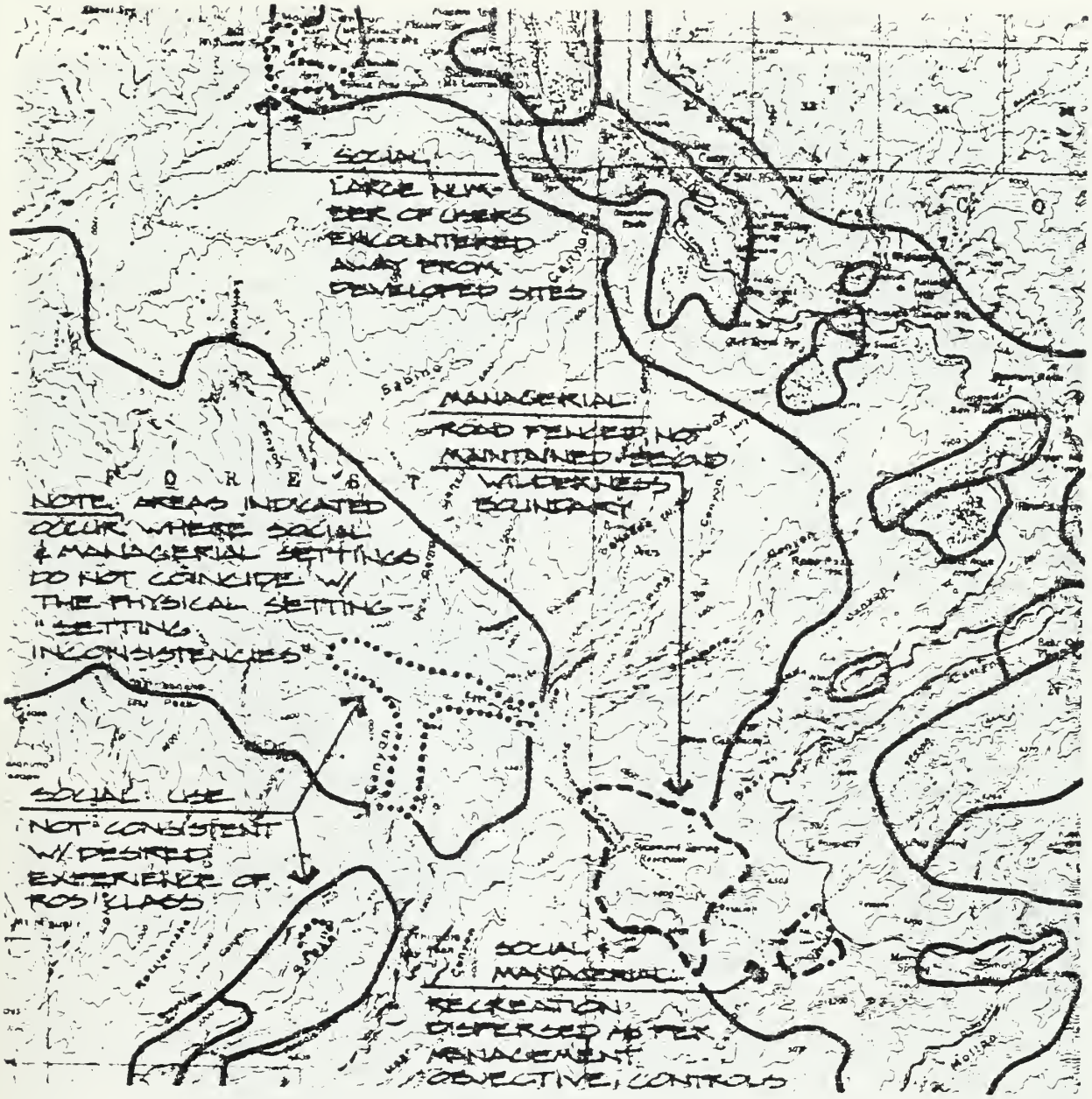

SOCIAL
LARGE NUMBER OF USERS ENCOUNTERED AWAY FROM DEVELOPED SITES
MANAGERIAL
ROAD FENCED NOT MAINTAINED
WILDERNESS BOUNDARY
NOTE: AREAS INDICATED OCCUR WHERE SOCIAL & MANAGERIAL SETTINGS DO NOT COINCIDE W/ THE PHYSICAL SETTING - "SETTING INCONSISTENCIES"
SOCIAL USE NOT CONSISTENT W/ DESIRED EXTERIOR OF ROS CLASS
SOCIAL & MANAGERIAL
RECREATION DISPERSED MIX MANAGEMENT OBJECTIVE: CONTROL

social & managerial setting

28

The physical, social, and managerial setting overlay maps together document the recreation opportunities of the planning area, and the conditions under management control which affect the recreation experience. This information is used in developing the Analysis of the Management Situation.

21.5—SETTING INCONSISTENCIES—When the physical, social, and/or managerial settings are not the same on the same piece of ground a "setting inconsistency" is occurring. A heavily-used hiking trail in a Primitive class physical setting may register a Semi-Primitive or Roaded Natural class social setting, for example due to the amount of use.

To resolve setting inconsistencies for the current situation alternative, map the Recreation Opportunity Spectrum class which best reflects current management direction. If this consideration still leaves a dilemma in identifying the existing class, use the following approach.

1. Tend toward the physical setting. The physical setting often represents the more permanent (or less easily changed) component of the Recreation Opportunity Spectrum class. The social and managerial components can often be altered in shorter time frames.

2. If emphasizing the physical setting yields unrealistic results average the differences between the physical, social and managerial setting components.

3. If averaging is necessary, consider that it is usually easier to shift in a Primitive to Urban direction along the spectrum than to move from Urban toward Primitive. Once physical developments or other human modifications are in place it is generally infeasible to remove or destroy them. Hence to preserve more options for the future, extra weight might be given in averaging setting components more toward the Primitive end of the spectrum.

Whether a setting inconsistency is acceptable or not for other, alternatives reflecting future management options is determined by each specific management prescription being considered. Setting inconsistencies are a basis for developing management prescription alternatives which change the existing physical, social, or managerial setting components to make them consistent for an area, or to purposefully manage an area with a setting inconsistency to attain some specific management objective. If trails are placed in an area to concentrate use, for example, then a trail social setting more toward the urban end of the spectrum than the physical setting may be desirable. On the other hand if trial use is so high that it distracts from the experience the recreationist is seeking, then the setting inconsistency is undesirable.

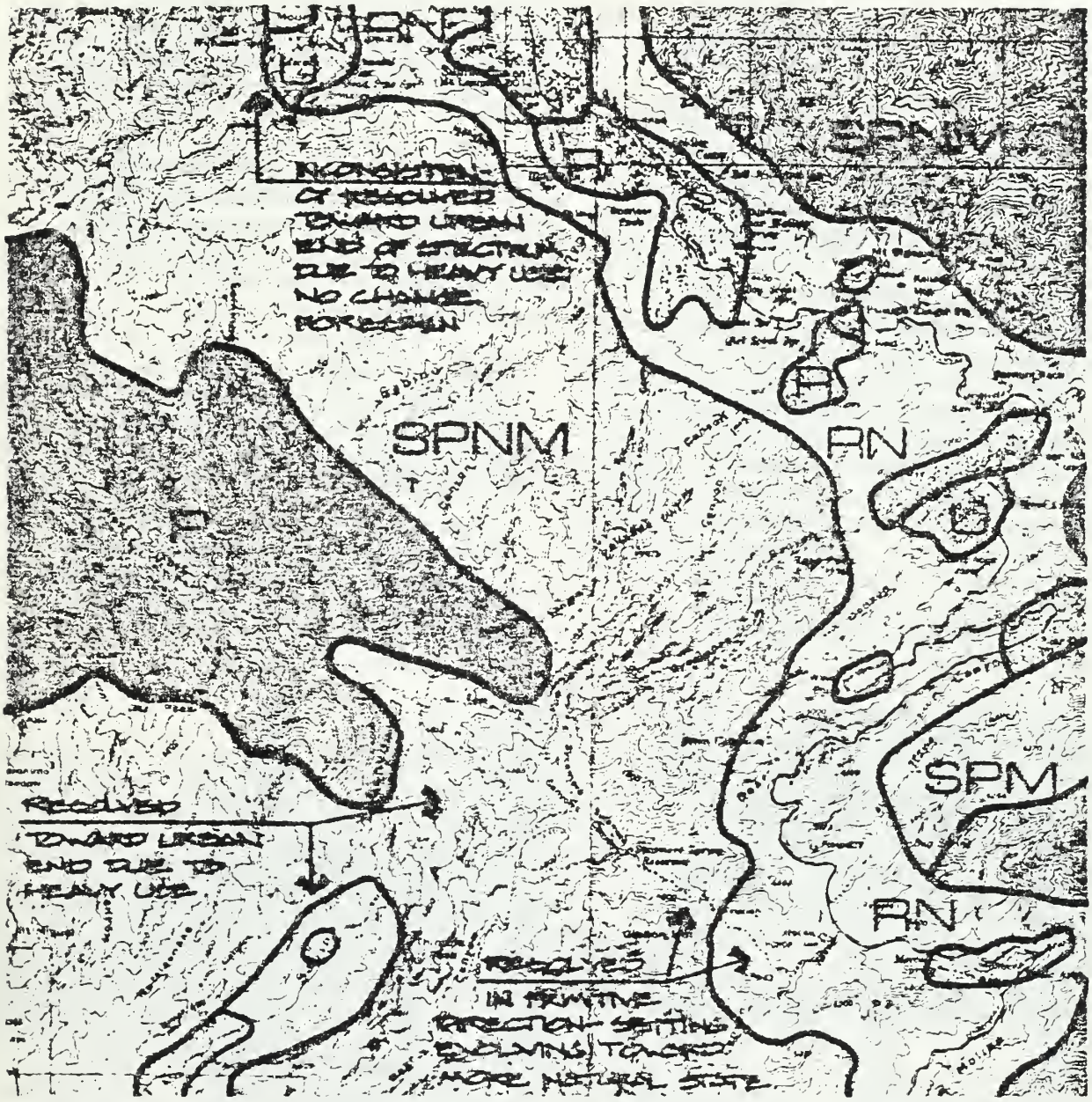
21.6—SEASONAL MAPPING—Forests which have issues, concerns, and opportunities relating to both summer and winter recreation opportunities may find it necessary to complete a Recreation Opportunity Spectrum map for each season. Activity, setting, and experience opportunities may change significantly between the seasons as a result of changes in travel restrictions, accessibility, and apparentness of the Evidence of Humans Criteria.

22—ROS CLASS ATTRACTIVENESS

Attractiveness information for each Recreation Opportunity Spectrum class:

1. Provides a general evaluation of the landscape in the class in relationship to its recreation opportunities.

2. Further describes each class by identifying those areas with specific attractions for the recreationist.



existing recreation opportunities

Whether to make an attractiveness overlay for each class is dependent upon the issues, concerns, and opportunities which the Forest plan is addressing. If the information gathered in the attractiveness step is relevant, an attractiveness overlay should be made. If the attractiveness information is not issue, concern or opportunity-related the overlay is optional (though attractiveness information is often valuable in helping to make "best buy" decisions during the resource allocation phases of the planning process).

22.1—ATTRACTIVENESS OVERLAY—If the decision is made to construct an attractiveness overlay proceed through the following steps

22.11—VARIETY RATING—Use the Variety Class rating, as defined in *National Forest Landscape Management Volume 2, Chapter 1*, to determine the attractivenes rating for each of the Recreation Opportunity Spectrum classes delineated on the physical setting overlay map. The premise is that landscapes with the most variety or diversity (landforms, vegetation patterns, water forms, and rock formations) also have the greatest attractiveness for recreation use and enjoyment.

22.12—OUTSTANDING FEATURES—Identify all those outstanding or unique features in the landscape such as waterfalls, sand beaches, and the like which are important in the development of the alternatives for the Forest Plan

22.13—SPECIAL AREAS—Identify any specially recognized or designated areas that provide opportunities for special or unique activities or experiences, such as scenic or historical areas

23—ACTIVITY OPPORTUNITIES

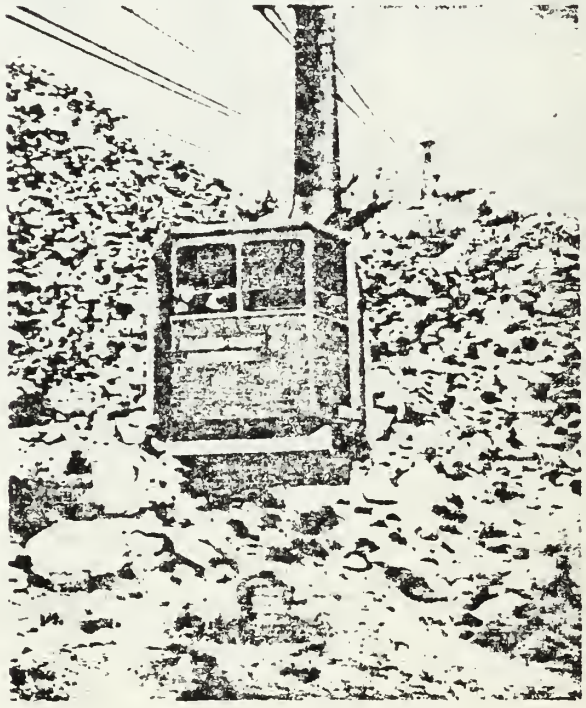
Recreation activities in given settings provide opportunities for the recreationist to attain desired experiences. The activity opportunities which make these experiences possible should be identified This information may be recorded on a separate overlay.

23.1—ACTIVITY IDENTIFICATION—Use the appropriate RIM definitions and codes, FSH 2309.11, to identify existing activity opportunities, and those potential activity opportunities for which data should be collected as a result of issues, concerns, and opportunities evaluated in the Forest plan. Also identify any unusual recreation activities not listed in the RIM codes if these activities are pertinent to the issues, concerns, and opportunities.

Activity opportunities which are common to given Recreation Opportunity Spectrum classes may be listed as being generally available in those classes. Activity opportunities which are unique, or which may be in short supply, should be specially noted as to kind, amount and location.

1—Existing Activities—Identify and inventory existing activities for each Recreation Opportunity Spectrum class delineated on the physical setting overlay under current management direction.

2—Potential activities—refer to activity opportunity needs identified through analysis of the management situation issues and concerns that are inconsistent, inappropriate, or inadequately provided for within the current situation inventory of recreation opportunities.



Alternative management prescriptions should be designed to assure that recreation goal and objective directions respond to a range of recreation activity opportunity needs including projected activity demands. The alternative management prescriptions provide the directional basis for changes in the current Recreation Opportunity Inventory that will in turn consistently, appropriately and adequately provide for the identified potential activities

These may be identified on the overlay for each alternative management prescription.

23.2—ACTIVITY CRITERIA—All activities considered must meet the following criteria

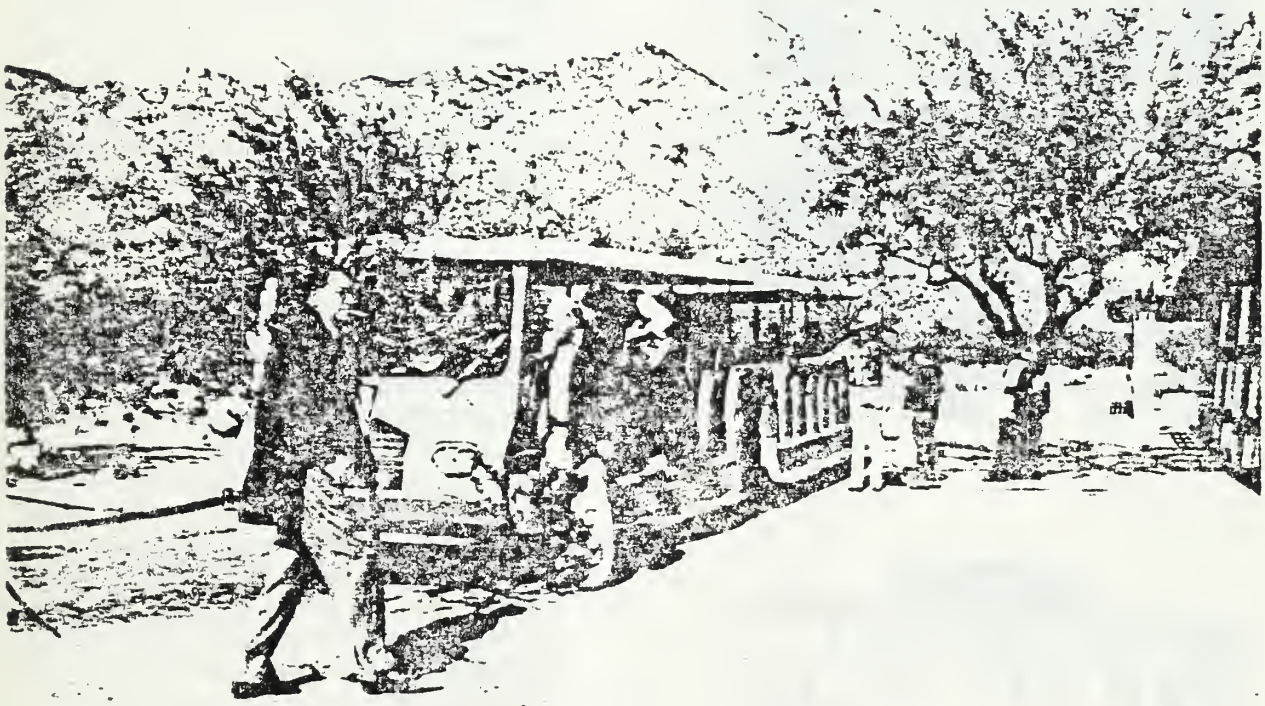
1. The resource must be capable of sustaining the impact of the use.

2. The activity is suitable as defined by Forest Service policy and established role FSM 2303.

24—RECREATION DEVELOPMENTS

24.1—EXISTING DEVELOPMENTS—Indicate by kind and PAOT capacity on the activity or another overlay, where Forest Service, other public agency, and private recreation developments exist within and adjacent to the planning area. Consider developments outside the Forest boundary when they may affect plan alternatives.

24.2—POTENTIAL DEVELOPMENTS—Map on the appropriate alternative management prescription overlay the potential development sites needed to meet the recreation goals and objective directions of the management prescription. Use information previously gathered if currently useful for site identification (NFRS, composite plans, code-a-site inventories, environmental assessments, etc.). Indicate an estimate PAOT.



25—CAPACITY

Recreation capacity is a measure, by Recreation Opportunity Spectrum class, of the maximum number of people who can obtain given kinds of recreation experiences at an established standard on a Forest within the constraints of resource capability. Capacity indicates the maximum recreation opportunity supply.

25.1—PRINCIPAL FACTORS AFFECTING CAPACITY—The principal factors affecting capacity for a Recreation Opportunity Spectrum class include:

1. **Land Type**
   a. Topography
   b. Erodibility
   c. Drainage
   d. Productivity
   e. Geologic Hazard
   f. Resistance to Compaction

2. **Vegetation**
   a. Height
   b. Density
   c. Resiliancy to Use
   d. Reproducibility

3. **Social**
   a. Number of Contacts With Others
   b. Types of Encounters (Behavior)
   c. Types of Activities
   d. Design Capacity

4. **Other**
   a. Access
   b. Length of Season
   c. Pattern of Use
   d. Occupancy Length
   e. Attractiveness of Site for Specific Activities

Capacity is a function of how a particular combination of these physical and social factors on a Forest interact to absorb or screen the sights and sounds of human activity and absorb physical use. Lower capacities generally exist where landscapes are open (little vegetative screening and flat topography) or where the soil or vegetation is fragile. Higher capacities generally exist where landscapes have more screening and are resistent to physical use.

By Recreation Opportunity Spectrum class, the more primitive the class along the spectrum, the greater, usually, the acreage requirements to provide the kinds of opportunities associated with the class.

25.2—"PRACTICAL MAXIMUM" VERSUS "MAXIMUM THEORETICAL" CAPACITY—Two ways exist to view or interpret the capacity concept. The first is that capacity—a measure of maximum potential supply—is best expressed by a figure based upon each acre of the Forest being at its upper physical and/or social capacity limit by Recreation Opportunity Spectrum class. This "maximum PAOT" times the number of days in the recreation season or year, becomes the "Maximum theoretical capacity."

The second view is that while this "maximum theoretical capacity" may provide a theoretical upper limit, it seldom represents a realistic or "practical maximum" because of usable versus unusuable acres, weekend versus weekday use, occupancy rate and the like. In this view "practical maximum capacity" is the effective upper limit because it accounts for factors which are always present and significantly affect recreation participation patterns.

The "maximum theoretical capacity" interpretation of capacity, that of a given Forest or Recreation Opportunity Spectrum class full of maximum number of people throughout a maximum season weekend, weekday, rain or shine notwithstanding-is useful to provide absolute upper limits beyond which recreation opportunities or use cannot exist. These values are not directly applicable for Land and Resource Management Planning analysis, however, since they usually represent tradeoffs between theoretical upper limits which seldom, if ever, occur on the ground.

The "practical maximum" interpretation of capacity does provide values which can be used in most Land and Resource Management Planning analyses, and is the approach portrayed in Sections 25.31 -33.

25.3—CAPACITY DETERMINATION—Forests or Regions can use one of two approaches to determine the "practical maximum capacity" of the Forest. One is to derive PAOT capacity for the developed sites and remaining area within and consistent with each Recreation Opportunity Spectrum class. Then, convert this figure to RVD's in order to compare supply with RVD units of demand and current and alternative management prescription direction.

The second approach is to derive capacity directly in RVD's by considering the specific activity mixes occurring on the Forest. This requires applying capacity standards for each activity by ROS class, such as hikers per mile of trail per hour, and summing the individual activity capacities to obtain one total maximum capacity for the area.

Whichever approach is used, indicate acres by Recreation Opportunity Spectrum class, so that per acre capacity coefficients can be calculated.

This must be done for the current inventoried situation and for each alternative management prescription when the direction provides for changes from current delineation or classification of ROS classes.

25.31—PAOT APPROACH—Sum by Recreation Opportunity Spectrum class the PAOT capacity of all developed sites, and the maximum PAOT capacity of the remaining area, within each class.

Table 8 gives capacity coefficient ranges which have been developed from numerous Forest settings, but which are not adjusted for "practical maximum capacity" as discussed in Section 25.2.

Table 8

Capacity Coefficient Ranges* (in PAOT/Acre)

	Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
High	.025	.083	.083	2.500	7.500	N/A
Low	.002	.008	.008	.083	.830	N/A

*Specific ranges must be developed to meet Regional or Forest Conditions

To make the "practical maximum" adjustment, lower the values in Table 8 on the basis of desirabie versus undesirable acres, occupancy rates, or other characteristics which apply to particular Forest settings. A combination of attractiveness (measured by Variety Class) and percent slope as criteria to define desirable acres, has been highly successful in some areas. In addition, the concept of "limiting factors," access or transportation system capacity, for example, has been successfully used for deriving viable capacity values.

Since the significance of which factors, or combination of factors (Section 25.1), varies as a function of actual Forest terrain and landscape, the Forest planner must fine tune or determine the reasonableness of the capacity estimates on a local basis. The planner is encouraged to check with surrounding Forests, other public agencies and/or the Regional Office to take advantage of specific procedures or considerations that may have been developed to address this point.

Once the maximum potential supply of opportunities by Recreation Opportunity Spectrum class is estimated in PAOT, the PAOT's should be converted into Recreation Visitor Days (RVD's)

25.32—PAOT TO RVD CONVERSION—PAOT's are converted into RVD's, or vice versa, in accordance with the following formulas:

$$1.\ PAOT = \frac{RVD}{MS \times PU \times \frac{LOS}{12}}$$

$$RVD = \frac{PAOT \times MS \times PU \times LOS}{12}$$

Where

MS = Managed Season of Use, in days;

PU = Pattern-of-Use, or the relationship between the average weekend use and average weekday use of sites and or areas

LOS = Average length of time the area or site is occupied in hours (If not known base upon local knowledge or experience.)

12 = The Constant for 12 hrs = RVD

Two calculations are needed, one for PAOT (RVD s) or overnight use, and the second for PAOT (RVD's) of day use. Added together, the two calculations give the total for an area or site.

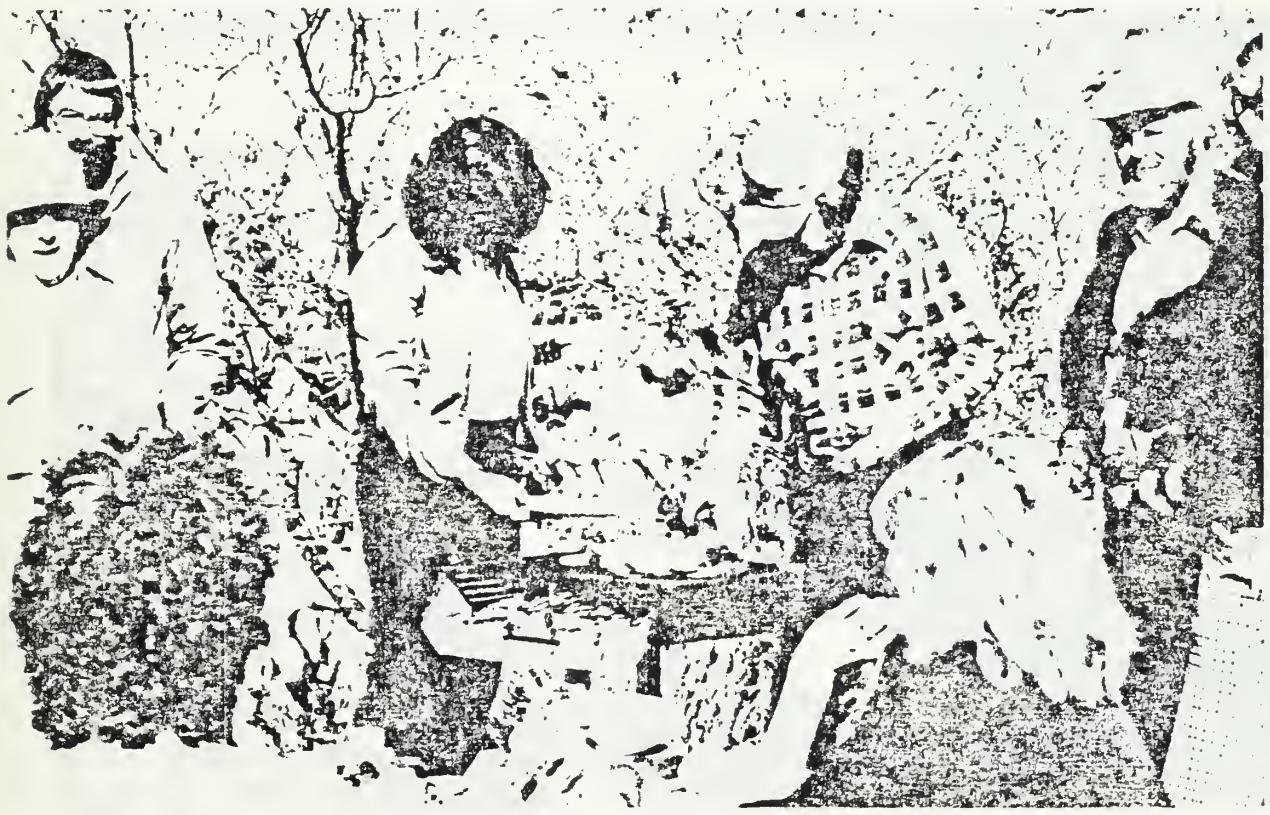
2. Rationale For Deriving Pattern-of-Use — People seldom use recreation sites or areas as completely on weekdays as on weekends. If they did the ratio of weekday to weekend use would be 1 1. Local patterns-of-use result from socio-economic considerations such as the five-day work week, five-day school week, vacation patterns, kinds of access (e.g., interstate systems), proximity to major metropolitan areas, and other such factors.

Table 9 can be used as a guide for reducing theoretical capacities of sites and areas to allow for patterns-of-use, and thus derive a "practical capacity."

Table 9

Pattern-of-Use Adjustment Factors

Pattern	Factor
Weekday Weekend	
1:1	1 00
1 1½	80
1:2	65
1:3	50
1:4	45
1 5	43
1 6	40
1 7	38
1 8	37
1 9	36
1 10	35



In many places the pattern-of-use applicable to local Forest recreation opportunities may be known. If not a review of research studies or other information may be necessary. In the absence of such information the pattern-of-use will have to be estimated based upon the local experience.

25.33—RVD APPROACH—In the RVD aporoach the relationship between RVD's of capacity per Recreation Opportunity Spectrum class and the physical characteristics of the class settings must first be established. Table 10, for example, shows values established by the Southwestern Region.

The Table 10 regional values are then adjusted for applicable local conditions, as shown in the following example.

Example

1. The Recreation Opportunity Spectrum class of an area is Roaded Natural, and the cover type pinyon juniper. The Table 10 coefficient is 10.5.

2. Capability area information indicates that only 50 percent of the area is suitable for the major recreation activities because of slope and vegetation. The adjustment factor is 0.5.

3. The area can be used yearlong, but because the attractions on the area are only small and big game hunting the use season is actually 60 days. The adjustment factor is 60 days/100 days (of total use season) = 60/100 = 0.6.

4. Observation of the occupancy pattern during the use season indicates that on the average weekends have four times as many people as weekdays. The adjustment factor in Table 9 is 0.45.

The adjusted coefficient is 10.5 · 0.5 · 0.6 · 0.45 = 1.42 for this Roaded Natural area.

Regardless of the approach used it must be done individually for the current inventoried situation and for each alternative management prescription direction that would require changes to the current delineation or classification of ROS class.

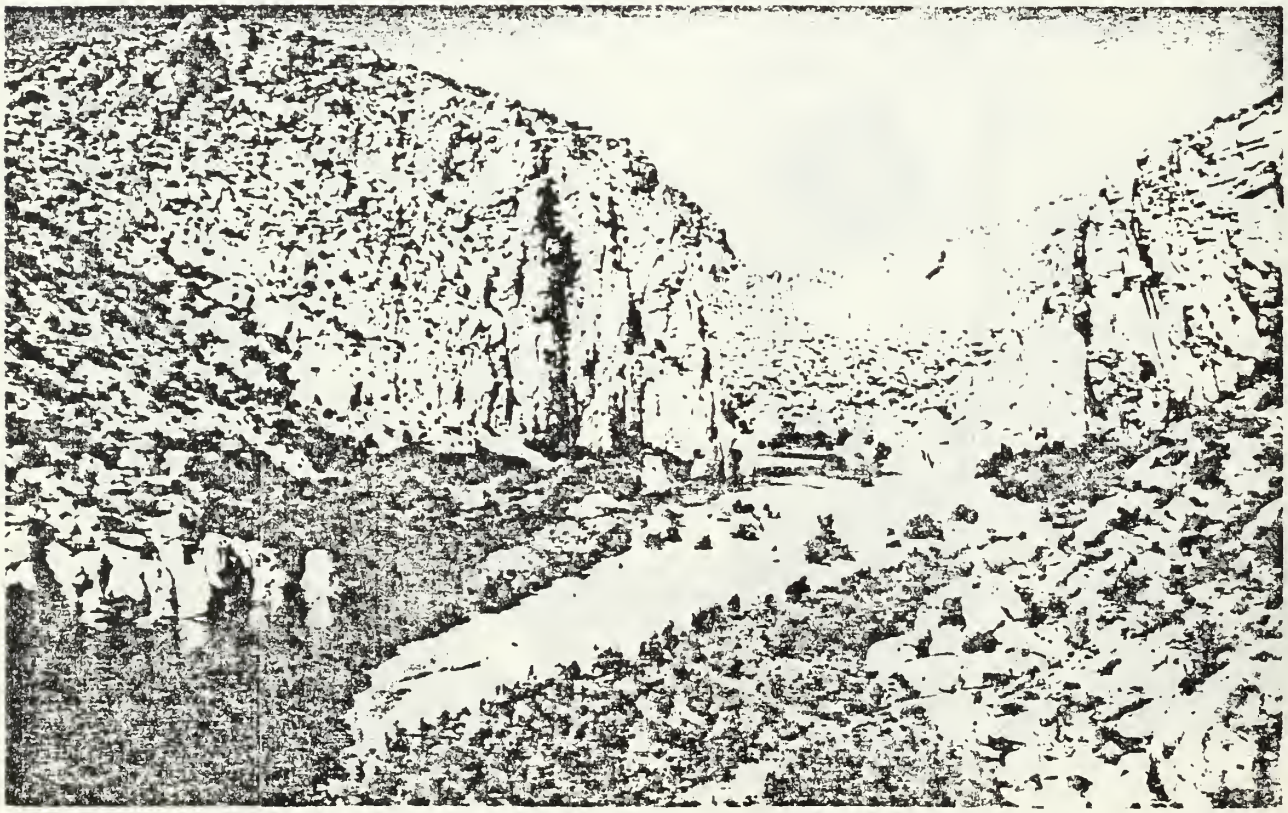


Table 10

Southwestern Region Use Densities By ROS Class and Eco-Region (RVD's/Acre/100-Day Season)

Eco-Region	Primitive	Semi-Primitive Non-Motorized	Semi-Primitive Motorized	Roaded Natural	Rural	Urban
Tundra	.45	1.05	2.4	6.0	Coefficients for Rural and Urban are based upon design capacity.	
Coniferous Forest	1.05	2.40	6.0	15.0		
Coniferous Woodland	.75	1.72	4.2	10.5		
Evergreen Woodland	.75	1.72	4.2	10.5		
Deciduous Forest	.75	1.72	4.2	10.5		
Grassland	.45	1.05	2.4	6.0		
Desert Shrub	.45	1.05	2.4	6.0		
Lava Flow & Gypsum	.45	1.05	2.4	6.0		
Riparian	1.05	2.40	6.0	15.0		
Range	.45 -1.05	1.05 -2.40	2.4 -6.0	6.0 -15.0		

25.4—USE OF CAPACITY FIGURES—The per acre capacity coefficients by Recreation Opportunity Spectrum class, derived by either the PAOT or RVD method for each alternative management prescription are used in the Land and Resource Management Planning analysis to register what kinds and amounts of recreation opportunities are being allocated or traded off

APPENDIX E

TRINITY RIVER

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APPENDIX F

Roaded Natural R.O.S. Class Carrying Capacity Determination

a. Roaded Natural Experience Opportunity.

About equal opportunities exist for affiliation with other user groups and for isolation from sights and sounds of man. Opportunity to have a high degree of interaction with the natural environment. Challenge and risk opportunities are not very important except in specific challenging activities. Practice of outdoor skills may be important. Opportunities for both motorized and nonmotorized recreation are present.

b. Roaded Natural Setting Opportunity.

Area is characterized by a generally natural environment with moderate evidence of the sights and sounds of man. Resource modification and utilization practices are evident, but harmonize with the natural environment. Concentration of users is low to moderate with facilities sometimes provided for group activities. On-site controls and restrictions offer a sense of security. Rustic facilities are provided for user convenience as well as for safety and resource protection. Conventional motorized use is provided for in construction standards and design of facilities.

c. Roaded Natural Activity Opportunities.

Within the Trinity River Area, activity opportunities consistent with the Roaded Natural ROS Class include such things as camping, hiking, enjoying scenery or natural features, nature study, photography, hunting, fishing swimming, canoeing, rafting, off-road vehicle use, picnicking, rock collecting, wood gathering, auto touring, interpretive use, rustic resorts, and organized camps.

Such things as spectator sports, competitive games, outdoor concerts, bicycling, jogging or modern resort type activities would be out of place in the Roaded Natural ROS Class environment.

d. Trinity River Area Theoretical Carrying Capacity.

A theoretical maximum use level or carrying capacity for the plan area can be calculated using the ROS system. We begin by selecting a capacity coefficient. The range of capacity

coefficients for the Roaded Natural ROS Class is from .083 to 2.5 people at one time (PAOT)/Acre. Because the Trinity River winds its way through dense coniferous forest and heavy riparian vegetation, there is considerable natural screening between individuals or groups of visitors who are only short distances apart. On this basis, a relatively high capacity coefficient may be selected. A coefficient of 2.0 was selected for the overall plan area. Of the total 3,300 acres of public lands available for use, however, only 20 percent, or 650 acres, are actually usable due to combinations of very steep terrain, access shortages, and extremely dense vegetation. The managed season (MS) of use must also be considered. For this area, it is approximately 160 days, or five months. Also, the pattern of use (PU) must be considered. Observations indicate that there are two weekend visitors for each weekday visitor in this area. This yields a pattern of use adjustment factor of 0.65. Finally, average length of stay (LOS) stated in hours is applied. It must be recognized that length of stay is directly related to the recreational activities being pursued and the origin of the visitor. Campers may stay in the area 24 hours for each day of visitation, while fishermen from the local area may only stay 2 to 3 hours for each visit. A reasonable average accounting for all activities must be used, recognizing that of the 650 usable acres, only a few hundred are actually suitable for camping, while the majority of the area is suitable for shorter duration activities. An average length of stay of 10 hours was selected for the purpose of this calculation.

The following formula can be used for determining a theoretical carrying capacity (CC) for the plan area.

Carrying Capacity (CC) = PAOT x MS x PU x LOS
CC= (2.0 x 650) x 160 x 0.65 x 10
= 1,352,000 recreation visitor hours per year

Total estimated use over the 1982 season was approximately 516,220 recreation visitor hours, or 38% of the theoretical carrying capacity. At the existing level of development, it must be recognized that certain activities have nearly reached this actual carrying capacity, such as camping, while other activities, such as boating, have use levels far below the area's carrying capacity. For example, using the same formula, where PAOT = 581, MS = 120, PU= 0.65 and LOS = 8, the river has a boating carrying capacity of 362,544 recreation visitor hours per year, of which only five percent is presently being utilized.

e. Maintaining Roaded Natural ROS Class.

In order to effectively manage the Trinity River Area to maintain the Roaded Natural ROS Class, use levels must be held at a level somewhat less than the theoretical carrying capacity, either for the overall mix of activities or for specific activities. Various modifications of the natural environment, facilities, or management intensity can change the carrying capacities considerably; however, constant reevaluation of the effects of use levels is critical to insure that negative synergies do not develop which fundamentally alter the quality of recreational experience opportunity which is being provided in this area.

APPENDIX G

Legislative Chronology - Wild and Scenic River System Status

Date	Event
1972	California State Legislature designates the Trinity River as a component of the State of California Wild and Scenic Rivers System under Public Resources Code, Section 5093.50-5093.65
July 18, 1980	California's Governor Edmund G. Brown requests Federal Designation of California's Wild and Scenic River System under Section 2(a)(ii) of Public Law 90-542 as amended through Public Law 95-625, the Wild and Scenic Rivers Act of 1978.
January 19, 1981	Secretary of the Interior Cecil Andrus designates the California Wild and Scenic Rivers as components of the National Wild and Scenic Rivers System.
February 11, 1983	U.S. District Court Judge William Ingram orders deletion of the California Rivers from the National Wild and Scenic Rivers System.
April 26, 1983	Ninth U.S. Circuit Court of Appeals reinstates National Wild and Scenic Rivers System protection for the California Wild and Scenic Rivers System pending the outcome of an appeal filed by the Environmental Defense Fund against Judge Ingram's February 11, 1983 ruling.

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